



SITE ASSESSMENT WORK PLAN

FORMER WATER TREATMENT PLANT
9300 OH-66
PIQUA, OHIO
WSP PROJECT #7775232021

DRAFT

DECEMBER 05, 2023

PREPARED FOR:
CITY OF PIQUA
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1 INTRODUCTION

WSP USA Environment & Infrastructure Inc. (WSP), working under contract to the City of Piqua has prepared this work plan to conduct a site assessment of the property located at 9300 OH-66, Piqua, Miami County, Ohio (Site). The Site was operated as the City of Piqua's Water Treatment Plant from 1925 until 2017. In 2018, the Site began being used for fire safety training associated with small-scale testing of lithium-ion batteries. The Energy Storage Response Group LLC (ESRG) operated at the Site from 2018 through September 2023, conducting destructive and non-destructive testing of lithium-ion batteries, including open burning.

1.1 SITE LOCATION AND VICINITY

The Site is located at 9300 OH-66, Piqua, Miami County, Ohio (Figure 1). Agricultural fields and residences are located to the north, northeast, west, and south of the Site. Hampshire Cabinetry is located southeast of the Site at 9225 OH-66. Swift Run Lake is northwest of the Site. A paved pathway (River's Edge Trail) and hydraulic canal border the Site to the west. The City of Piqua Roadside Park, which includes the Great Miami River Trail and Roadside dog park, is located east of the Site across OH-66. A parking lot with access to the River's Edge Trail and Great Miami River Trail is located to the north of the Site.

1.2 SITE ASSESSMENT OBJECTIVES

On September 26, 2023, the Ohio Environmental Protection Agency (EPA) issued a Notice of Violation (NOV) letter to Mr. Nick Warner, care of the Stevens Law Firm, Ltd., regarding ESRG operations at the Site. The NOV letter was issued following an inspection conducted by the Ohio EPA and the Regional Air Pollution Control Agency (RAPCA) prompted by complaints of open burning of lithium-ion batteries at the Site. On the day of the inspection, ESRG agreed to cease all destructive battery testing activities that result in air contaminant emissions. ESRG has since ceased all operations at the Site, conducted decontamination/decommissioning activities, and vacated the Site. The objective of the Site Assessment is to assess the Site to determine if ESRG's activities have resulted in environmental impairment of the Site.

2 SITE BACKGROUND

The Site is owned by the City of Piqua. The Site was operated as the City of Piqua's Water Treatment Plant from 1925 until 2017. In 2018, the Site began being used for fire safety training associated with small-scale testing of lithium-ion batteries. Through a formal agreement with the City of Piqua, ESRC operated at the Site from 2018 through September 2023, conducting destructive and non-destructive testing of lithium-ion batteries, including open burning.

2.1 OPERATIONAL HISTORY

Based on information provided in regulatory files and by the City of Piqua, ESRC's operations were conducted in the following areas:

- **Test Room** – The Test Room is located on the west end of the outbuilding located west of the former Water Treatment Plant building. The Test Room is constructed with fireproof wall panels. The exterior is metal-sided, and the roof contains a hood and exhaust system. There is a grated floor drain in the Test Room that leads to a sub-grade basin that was used for the collection of fire suppressant wastewater.
- **Test Pad** – The Test Pad is a concrete pavement pad that is 40 feet by 120 feet and 8-inch thick surrounded by gravel, located on the west and southwest side of the Site. Open burning occurred on the Test Pad. The Test Pad includes two sub-grade basins that were used for the collection of fire suppressant wastewater. The basins are constructed of prefabricated concrete that is 10-inches thick.
- **Gravel Storage Area** – ESRC staged equipment and materials in a gravel surfaced, enclosed (fenced) storage area to the north of the Test Room. The fence and gravel surfacing were installed in summer of 2023, but equipment and materials were staged in the same area prior to that time. Soil removed from the area to accommodate the placement of gravel is staged in a stockpile just south of the enclosed area.

ESRC staged wastewater in totes along the gravel drive on the south side of the Site, just west of the asphalt paved driveway. There is one stormwater drain in ESRC's operational area. The stormwater drain is located to the south of the Test Room and reportedly connects with the former Water Treatment Plant foundation dewatering system, which discharges to an outfall at the Great Miami River, southeast of the Roadside Park.

2.2 REGULATORY INFORMATION

WSP searched Ohio EPA's electronic document (e-Doc) filing system for files related to ESRC's operations at the Site. A chronological summary of the information contained in the e-Doc filing system is provided below.

- January 15, 2021, letter from RAPCA to the Piqua Fire Department with Permission to Open Burn lithium-ion batteries and components for fire research/training pursuant to OAC 3745-19-03(C)(5) with certain restrictions (Permission Number 2021-02). Permit valid for January 22 through April 21, 2021.

- May 31, 2022, letter from RAPCA to the Piqua Fire Department with Permission to Open Burn lithium-ion batteries and components for fire research/training pursuant to OAC 3745-19-03(C)(5) with certain restrictions (Permission Number 2022-14). Permit valid for June 1, 2022 through June 1, 2023.
- June 5, 2023, letter from RAPCA to the Piqua Fire Department with Permission to Open Burn lithium-ion batteries and components for fire research/training pursuant to OAC 3745-19-03(C)(5) with certain restrictions (Permission Number 2023-27). Permit valid for June 5, 2023 through June 5, 2024.
- September 26, 2023, NOV letter from the Ohio EPA to Mr. Nick Warner, care of The Stevens Law Firm, Ltd., regarding ESRG's operations at the Site. The NOV letter was the result of an inspection conducted by the Ohio EPA and RAPCA following complaints of open burning of lithium-ion batteries at the Site and concerns regarding air emissions and water contamination. During the inspection, ESRG discussed the activities being performed including:
 - deflagration and destructive testing that consists of forcing lithium-ion batteries into situations which ignite the batteries causing uncontrolled air emissions;
 - monitoring and collection of air pollutant emissions data from the burn room;
 - collection and disposal of wastewater from the catch basins;
 - non-destructive lithium-ion battery testing that does result in ignition or combustion;
 - storage of burned batteries for third party entities;
 - disposal of burned batteries; and
 - charging of batteries.

The NOV states that the deflagration and destructive lithium-ion battery testing performed by ESRG are beyond the scope of the open burning permissions under OAC 3745-19-03(C)(5) and the destructive battery testing operations are an air contaminant source that is subject to Permit to Install and Operate requirements of OAC 37431-02(A)(1)(c).

- September 26, 2023, letter from ESRG to Mr. Paul Oberdorfer stating that effective September 22, 2023 ESRG has ceased all destructive testing operations at the Site.
- Email from Nick Warner on behalf of ESRG to James Kavalec and Russell Brown of Ohio EPA, dated October 1, 2023, providing records of wastewater collection and disposal from the previous three years. On two occasions, one in 2022 and one in 2023, wastewater was removed from the Site by Buckeye Elm Contracting. In 2022, the wastewater was delivery to Valicor Environmental Services for processing. In 2023, the wastewater was delivered to the City of Piqua wastewater treatment plant for processing. Alloway laboratory wastewater sample results for anions, pH, metals, and flashpoint are included as an attachment to the email.

- ALS laboratory data package dated October 18, 2023 for five wastewater samples collected on October 4, 2023. The samples were identified as Composite A, Composite B, North Basin, South Basin, and Burn Room Basin. Samples were analyzed for anions, metals, and pH.

2.3 DECOMMISSIONING

ESRG ceased destructive testing operations on September 22, 2023, and vacated the Site by November 21, 2023. Between those dates, ESRG reportedly conducted the following decontamination and decommissioning activities:

- Test Room – The Test Room was emptied of equipment and materials. The basin was pumped out and filled with soil/gravel from the Site. Wastewater removed from the basin was contained in plastic totes that were staged along the gravel drive, characterized, and removed from the Site for off-site processing.
- Test Pad – ESRG's equipment and materials were removed from the Test Pad. The two basins were pumped out and filled with soil/gravel from the Site. Wastewater removed from the basins was contained in plastic totes that were staged along the gravel drive, characterized, and removed from the Site for off-site processing.
- Gravel Storage Area – ESRG's equipment and materials were removed from the Gravel Storage Area.

2.4 PREVIOUS ASSESSMENT ACTIVITIES

On November 1, 2023, WSP conducted sampling to evaluate for potential off-Site impacts. The objective of the sampling event was to evaluate drinking water quality, surface water quality, and residue on surfaces for chemicals of concern associated with burning of lithium-ion batteries.

WSP collected samples of potable water from the City's Water Treatment Plant and the water fountain located at Roadside Dog Park. WSP collected a surface water sample from each of the City's three surface water intake locations and a surface water sample from the Great Miami River upstream of the City's intake locations. WSP collected two wipe samples to evaluate for residue, such as particulates/dust, on impervious surfaces. One wipe sample was collected from the west side of the water fountain, between the dog water spigot/bowl and the human water spigot. The second residue wipe sample was collected from the western support rafter, near the center support column.

The letter report documenting the assessment is provided in **Appendix A**.

3 ENVIRONMENTAL SETTING

The Site is located in west-central Ohio, north of downtown Piqua. Nearby land use is predominantly agricultural. The Site topography is flat to gently sloping with surface elevations between 870 and 890 feet above mean sea level. The Site location is shown in **Figure 1**.

3.1 PHYSIOGRAPHY

The Site lies in the Till Plains section of the Central Lowland Province. The Till Plains Section is characterized by gently rolling hills and deep river valleys. Most of the hills are a series of till moraines left from multiple glacial advances during the Pleistocene epoch. The major river valleys are filled with thick glacial deposits of sand and gravel mixed with silt and clay.

3.2 GEOLOGY

Unconsolidated surficial deposits in the Piqua area are of glacial and alluvial origin. Nearby well logs obtained from the Ohio Department of Natural Resources indicate the overburden consists of silt, sand, gravel, and clay of varying compositions. Bedrock in the area is limestone of Silurian age and was encountered between 16 and 35 feet below ground surface in most of the well logs although as deep as 70 feet in two of the nearby well logs. The Silurian age limestone is underlain by interbedded limestone and shale of the Ordovician age.

3.3 HYDROGEOLOGY

According to the Ohio Department of Natural Resources *Ground-Water Resources of Miami County* map dated 1984, the Site is located in an area where the limestone aquifer may yield up to 75 gallons per minute. Groundwater in the limestone generally flows through joints and cracks, commonly along the contact with the underlying shale of the Richmond group. Groundwater flow in the bedrock beneath the Site is anticipated to be towards the east but could vary due to localized effects and pumping influence.

3.4 SURFACE WATER

The Site is located within the Great Miami River watershed. The Great Miami River is situated approximately one-quarter mile east of the Site and flows south through the area. To the west and adjacent to the Site is a hydraulic canal, which stretches in a north-south direction, connecting Swift Run Lake, Echo Lake, and Franz Pond.

Drinking water for and in vicinity of the Site is supplied by the City of Piqua. The source of the City of Piqua's water supply is surface water from the Great Miami River, the Piqua Hydraulic System (i.e., Swift Run Lake, Echo Lake, Frantz Pond, and the connecting canals), and a gravel pit. The Water Treatment Plant filters, softens, and disinfects the water as part of its treatment processes.

4 DATA QUALITY OBJECTIVES

Data Quality Objectives (DQOs) for the Site assessment were developed following U.S. EPA's stepwise process for DQO development, as summarized in **Table 1**.

Table 1 - Data Quality Objectives

Process Step	Description
State the Problem	Is the Site adversely impacted from ESRG's activities?
Identify the Goals of the Study	Determine if there has been a release to soil, stormwater or deposition via air emissions, that have resulted in Site-related contaminants at concentrations above screening levels or applicable standards
Identify Information Inputs	Information regarding ESRG's operations at the site and decommission activities (see Section 2) Screening levels and standards published by USEPA and/or Ohio EPA Background concentrations of COCs Soil, stormwater, and wipe sample data
Define the Boundaries of the Study	The study will focus on assessment within the boundaries of the Site
Develop the Analytic Approach	Collect representative samples and analyze for chemicals of concern (COCs).
Specify Performance/Acceptance Criteria	Refer to Section 5.5 for Field Quality Assurance/Quality Control Procedures Laboratory performance/acceptance criteria to be defined by the analytical method and laboratory SOPs.
Develop a Plan for Obtaining Data	Section 5 of this Work Plan presents the sampling and analysis plan

5 SAMPLING AND ANALYSIS PLAN

WSP has developed a Sampling and Analysis Plan to meet the DQOs presented in Section 4. This section presents the sampling rationale and plan for obtaining the Site assessment data.

5.1 SAMPLING RATIONALE

ESRC tested damaging forces on batteries and conducted research/training on fire fighting techniques associated with lithium-ion battery fires. The positive cathode material in lithium-ion batteries is composed of lithium cobalt oxide, lithium manganese oxide, lithium iron phosphate, lithium nickel manganese cobalt oxide, or lithium nickel cobalt aluminum oxides. The anode in lithium-ion batteries is formed out of carbon (e.g., graphite) and coated onto a metal collector, usually copper. The liquid electrolyte consists of organic carbonates, such as ethylene carbonate, dimethyl carbonate, or diethyl carbonate, and a dissociated conducting salt such as lithium hexafluorophosphate¹. Aluminum is usually used for the pack due to its lightweight characteristic. Lithium-ion batteries can become damaged due to physical impacts, temperature extremes, and overcharging. Heat released during lithium cell failure can lead to a chain reaction involving an exponential increase in temperature known as thermal runaway. Thermal runaway can cause the cell housing to open or burst due to pressure changes, releasing flammable gases and resulting in a fire. Gases released into the air can include carbon monoxide, carbon dioxide, hydrogen fluoride, hydrogen chloride, sulphur dioxide, hydrogen cyanide, hydrocarbons (methane, ethene, propene, ethane, butene, propane, butane), and water vapor.

5.1.1 CHEMICALS OF CONCERN

Based upon the composition of the batteries and chemical substances that may be released in a fire, WSP has identified the following as the primary COCs:

- Inorganics (metals, metalloids, and selenium),
 - Cyanide,
 - Anions (chloride, fluoride, nitrate, nitrite, sulfate, phosphate) [aqueous].
 - Polycyclic aromatic hydrocarbons (PAHs), which are formed through incomplete combustion of organic substances.
-

5.1.2 AREAS OF INTEREST

As described in Section 2.1, ESRC's operations were conducted in the following areas:

- Test Room – The Test Room is located on the west end of the outbuilding located west of the former Water Treatment Plant building and southwest of the water treatment
-

¹ Held et al, 2022, *Thermal runaway and fire of electric vehicle lithium-ion battery and contamination of infrastructure facility*, Published by Elsevier Ltd Science Direct Journal

basins. The Test Room is constructed with fireproof walls and ceiling. The exterior is metal-sided, and the roof contains a hood and exhaust system. There is a grated floor drain in the Test Room that leads to a sub-grade basin that was used for the collection of fire suppressant wastewater.

- Test Pad – The Test Pad is a concrete pad located on the west and southwest side of the Site. Open burning occurred on the Test Pad. The Test Pad includes two sub-grade basins that were used for the collection of fire suppressant wastewater.
- Gravel Storage Area – ESRC staged equipment and materials in an enclosed (fenced) storage area with gravel surfacing, located to the north of the Test Room. Soil removed from the storage area prior to gravel placement in summer of 2023 is staged to the south of the Gravel Storage Area and is included as a potential secondary source for the AOI.

These operational areas are considered AOIs for the Site assessment. **Table 2** presents the Areas of Interest (AOIs) and associated COCs. Photographs of the Site and AOIs are provided in **Appendix B**.

Table 2 – Areas of Interest and Chemicals of Concern

Area of Interest	Description	Chemicals of Concern	Media to be Sampled
AOI 1: Test Room	Used for deflagration and destructive testing of lithium-ion batteries and monitoring of air pollutant emissions. Test Room includes basin used to contain fire suppressants.	Inorganics (Metals, Metalloids, Nonmetals), Anions (Chloride, Fluoride, Bromide, Nitrate/Nitrite, Phosphate, Sulfate), Cyanide, PAHs	Soil, Storm Water, Wallboard (residue)
AOI 2: Test Pad	Used for open burning of lithium-ion batteries and fire safety training. The Test Pad includes two basins used to contain fire suppressants.	Inorganics (Metals, Metalloids, Nonmetals), Cyanide, PAHs	Soil

Table 2 – Areas of Interest and Chemicals of Concern

Area of Interest	Description	Chemicals of Concern	Media to be Sampled
AOI 3: Enclosed Gravel Storage Area and Soil Stockpile	Fenced-In storage area that was used for the storage of materials and supplies, presumed to include burned batteries, and adjacent soil stockpile (surface soil originating from storage area)	Inorganics (Metals, Metalloids, Nonmetals), Cyanide, PAHs	Soil

5.2 SOIL SAMPLING

Soil sampling will be performed using direct push technology or manual means (e.g., shovel). Soil cores will be retrieved continuously during drilling, and WSP will record descriptions of the soil on boring logs. Excess soil will be returned to the site of origin.

5.2.1 AOI 1: TEST ROOM

Three soil borings will be conducted through the gravel surrounding the Test Room, as shown on **Figure 2**. The borings will be advanced to 4-feet (ft) below ground surface (bgs), and soil samples will be collected from the following depth intervals for laboratory analyses:

- 0 to 2 ft bgs to evaluate potential exposure risk to site workers, visitors, maintenance personnel, and excavation workers;
- 2 to 4 ft bgs, to evaluate potential exposure risk to excavation workers and obtain data for vertical delineation.

Soil from each interval will be homogenized in a stainless-steel bowl using a stainless steel scoop prior to placing into the sample containers. Gravel and vegetation will be removed from the sample. If a sampling interval is entirely composed of coarse gravel, then no sample will be collected for that interval.

5.2.2 AOI 2: TEST PAD

Four soil borings will be conducted just beyond the pavement in the area of the Test Pad as shown on **Figure 2**. The borings will be advanced to 4-ft bgs, and soil samples will be collected from the following depth intervals for laboratory analyses:

- 0 to 2 ft bgs to evaluate potential exposure risk to site workers, visitors, maintenance personnel, and excavation workers;
- 2 to 4 ft bgs, to evaluate potential exposure risk to excavation workers and obtain data for vertical delineation.

Soil from each interval will be homogenized in a stainless-steel bowl using a stainless steel scoop prior to placing into the sample containers. Gravel and vegetation will be removed from the sample. If a sampling interval is entirely composed of coarse gravel, then no sample will be collected for that interval.

5.2.3 ENCLOSED GRAVEL STORAGE AREA

Three soil borings will be conducted in the enclosed gravel storage area as shown on **Figure 2**. The borings will be advanced to 4-ft bgs, and soil samples will be collected from the following depth intervals for laboratory analyses:

- 0 to 2 ft bgs to evaluate potential exposure risk to site workers, visitors, maintenance personnel, and excavation workers;
- 2 to 4 ft bgs, to evaluate potential exposure risk to excavation workers and obtain data for vertical delineation.

Soil from each interval will be homogenized in a stainless-steel bowl using a stainless steel scoop prior to placing into the sample containers. Gravel and vegetation will be removed from the sample. If a sampling interval is entirely composed of coarse gravel, then no sample will be collected for that interval.

Soil will also be collected from two locations within the soil stockpile as shown on **Figure 2**. At each sampling location, the top six inches of soil will be removed, and a grab soil sample will be collected from the soil beneath this depth.

5.3 STORMWATER SAMPLING

WSP will attempt to collect a stormwater sample from the catch basin located adjacent to the Test Room. The stormwater sample will be collected by lowering a collection device, such as a polyethylene bailer, down into the manhole to collect and extract stormwater. The stormwater will be transferred from the device into laboratory-provided sample containers. The process will be repeated as needed until sufficient volume to fill the containers has been obtained. If the catch basin is dry but contains sufficient sediment then a sample of the sediment will be collected instead.

5.4 RESIDUE SAMPLING

Five wipe samples will be collected from the Test Room, one from each of the four sides (walls, door) and one from the roof vent. Where applicable, the sampling locations will be biased to areas with visible charring/residue.

Wipe sampling will also be performed at two exterior locations and one interior location within the new fire training building (see photograph 3); although it is noted that this building was constructed after ESRC's final burn activity. The exterior samples will be collected from the north and west sides of the building, within the physical reach of the sampler. The interior sampling locations will be determined based on accessibility.

The wipe samples will be collected using laboratory-prepared wipe sample kits composed of a gauze pad, distilled water, and a dropper. The wipe samples will be collected by placing a template over the area to be sampled. The exposed area within the template will be wiped using a distilled water moistened gauze pad. The entire surface will be wiped with firm pressure using horizontal and vertical strokes applied in a zig zag pattern. After the area has been wiped, the wipe will be inserted into a vial or jar pending analysis.

5.5 QUALITY ASSURANCE / QUALITY CONTROL

In addition to the primary samples, quality control (QC) samples to be collected during the sampling activities include:

- Equipment blank - An equipment blank (rinsate) will be collected by pouring laboratory-supplied analyte-free water over and/or through the non-dedicated, non-disposable sampling equipment and into the appropriate sampling containers. Equipment blanks are used to determine if decontamination procedures were adequate and to evaluate for potential cross-contamination. One equipment blank will be collected from the stainless steel bowl and scoop.
- Duplicate sample - A duplicate sample will be collected and analyzed to assess the homogeneity of the sampling results. Duplicate samples are collected concurrent with the primary samples and uniquely labeled but have the same date and time as the corresponding primary sample. Duplicate samples will be collected for the soil at a frequency of 10% (i.e., 2 duplicate soil samples).
- Field blank - Field blanks are used to evaluate total ambient conditions during sampling and laboratory sources of contamination. The field blanks will be prepared using analyte-free reagent water that has been taken to the sampling site, is transferred into the appropriate sample container on site, and is analyzed by the laboratory. One field blank will be collected during the wipe sampling.

5.6 DECONTAMINATION

Non-dedicated, reusable sampling equipment and materials will be decontaminated before use, between boring locations, and at the completion of the sampling event. Sampling equipment will be decontaminated using a Liquinox® or Alconox® water wash, potable water rinse, and final distilled water rinse. The decontamination water will be disposed into the sanitary sewer system.

5.7 LABORATORY ANALYSES

WSP USA will retain a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory to conduct the analyses. The samples will be analyzed as outlined in **Table 2**.

5.7 LABORATORY ANALYSES

WSP USA will retain a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory to conduct the analyses. The samples will be analyzed as outlined in **Table 2**.

Table 2: Analyses by Matrix and AOI

Matrix	Analysis	Method	AOI			Fire Training Building
			1: Test Room	2: Test Pad	3: Enclosed Gravel Storage Area	
Soil	Inorganics ¹	6010/7471	✓	✓	✓	
	Cyanide	9010/9012/SM4500CN-CE	✓	✓	✓	
	PAHs	8270	✓	✓	✓	
Storm Water	Inorganics ¹	6010/7471	✓			
	Anions ²	300	✓			
	Cyanide	9010/9012/SM4500CN-CE	✓			
	PAHs	8270	✓			
Wipe	Inorganics ¹	6010/7471	✓			✓

¹Aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, calcium, chromium, cobalt, copper, iron, lead, lithium, magnesium, manganese, molybdenum, nickel, phosphorus, potassium, selenium, silicon, silver, sodium, strontium, thallium, tin, titanium, vanadium, and zinc.

²Chloride, fluoride, bromide, nitrate/nitrite, phosphate, sulfate

6 DATA EVALUATION AND REPORTING

Analytical data resulting from the site assessment will be screened using published regulatory criteria. This screening level evaluation will be used to develop recommendations for next steps, which could be developing a risk-derived standard, further investigation, or no further action.

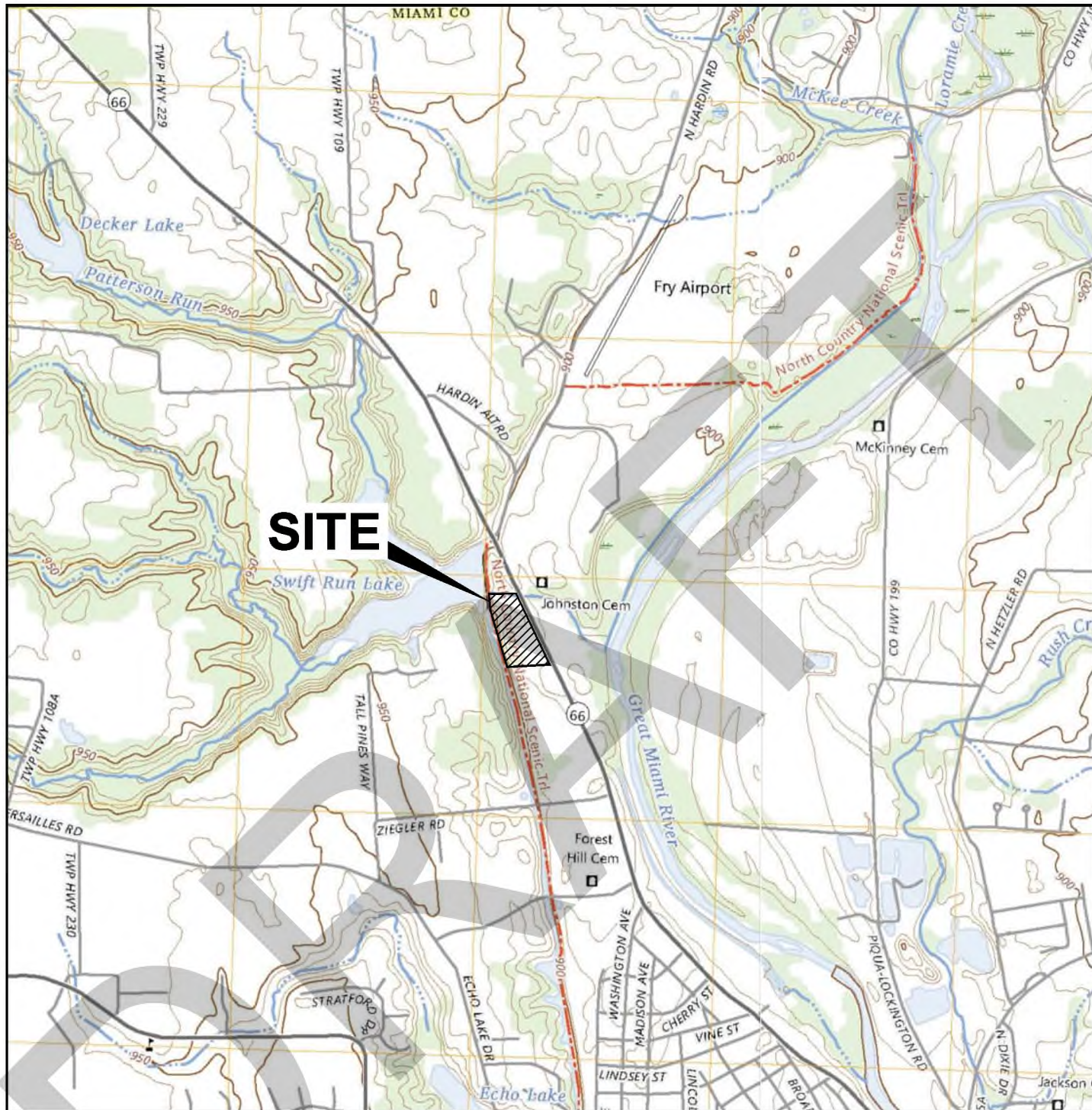
- Soil – Analytical data for the soil samples will be screened using Ohio EPA Voluntary Action Program Generic Direct Contact Soil Standards (GDCSS) and/or US EPA Regional Screening Levels (RSLs) based on the sample collection depth.
 - 0 to 2 ft bgs – GDCSS for Commercial/Industrial Land Use Category and/or RSL for Composite Worker Soil
 - 0 to 4 ft bgs – GDCSS for Construction Activities Category and/or RSL for Composite Worker Soil

In addition, background concentrations of COCs in soil will be considered, if published.

- Storm Water – Analytical data for the storm water samples initially will be screened using drinking water criteria: Maximum Contaminant Levels (MCLs), Secondary Maximum Contaminant Levels (SMCLs), US EPA RSLs for Residential Tap Water (Hazard Index = 1, TR = 1×10^{-5}), Ohio EPA Drinking Water Standards for Ohio Public Water Systems, and/or Ohio EPA Voluntary Action Program Unrestricted Potable Use Standards. If drinking water criteria are exceeded, further screening will be performed using the Outside the Mixing Zone Average (OMZA) Statewide water quality criteria for protection of aquatic life and human health. If sediment samples are collected in lieu of storm water, the sediment results will be screened consistent with soil data.
- Wipe – Relevant criteria are not established for wipe samples. Chemical concentrations in wipe samples will be evaluated subjectively relative to other lines of evidence.

A report will be prepared to document the sampling activities and analytical results. The report will include a description of the sampling procedures used, summary table of the analytical results, and a comparison of the data to relevant screening levels.

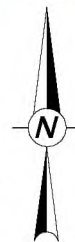
FIGURES



Quadrangle Location

REFERENCE: USGS 7.5-minute topographic quadrangle maps of Piqua East and Piqua West, Ohio, 2023.

0 2000 4000
APPROXIMATE SCALE IN FEET



CONSULTANT

WSP USA Environment & Infrastructure Inc.

CONSULTANT



DATE 11/07/2023

DESIGNED —

PREPARED RLB

REVIEWED RED

APPROVED RED/PJS

PROJECT/CLIENT

CITY OF PIQUA
Former Water Treatment Plant, Piqua, Ohio

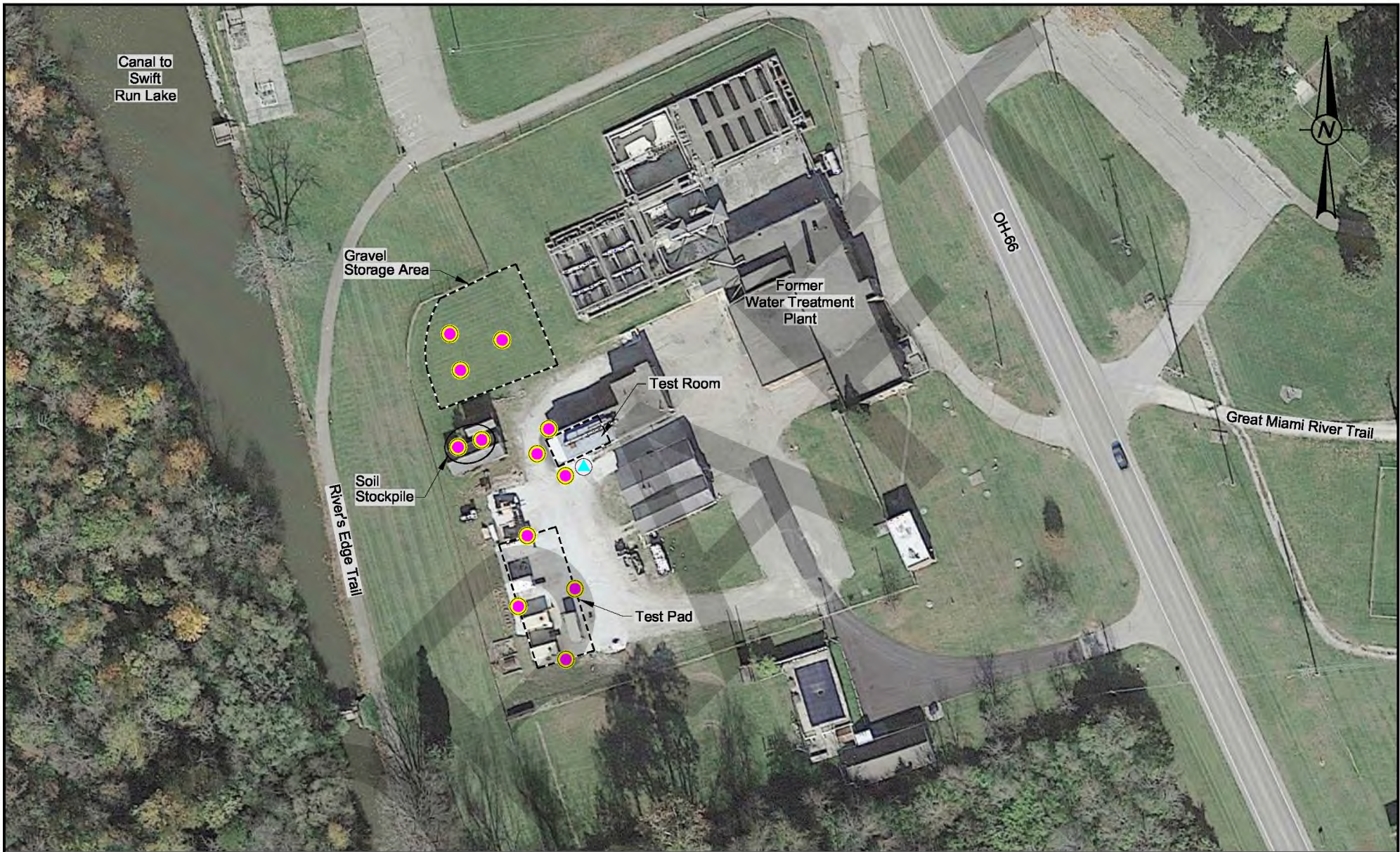
TITLE

SITE LOCATION MAP

PROJECT NO.
7775 23 2021

REV.

FIGURE
1



LEGEND

- Proposed Soil Sampling Location
- Proposed Storm Water Sampling Location

Google Earth Pro image dated 11/2021.



CONSULTANT NAME

WSP USA Environment & Infrastructure Inc.

CONSULTANT



DATE 12/04/2023

DESIGNED --

PREPARED RLB

REVIEWED LF

APPROVED LF/PJS

CLIENT NAME/PROJECT

CITY OF PIQUA
Former Water Treatment Plant, Piqua, Ohio



TITLE

PROPOSED SAMPLING LOCATIONS

PROJECT NO.
7775 23 2021 02

REV.

FIGURE
2

APPENDIX

A LETTER REPORT SUMMARIZING DRINKING WATER, SURFACE WATER, AND RESIDUE WIPE SAMPLING



November 28, 2023

Mr. Kevin Krejny
Utilities Director
City of Piqua
121 Bridge Street
Piqua, OH 45356

Subject: Letter Report Summarizing Drinking Water, Surface Water, and Residue Wipe Sampling Conducted near the City of Piqua Former Water Treatment Plant, 9300 OH-66, Piqua, Miami County, Ohio
WSP USA Project No. 7775-23-2021

Dear Mr. Krejny:

The purpose of this correspondence is to document sampling activities conducted by WSP USA Environment & Infrastructure Inc. (WSP USA) near the City of Piqua Former Water Treatment Plant, 9300 OH-66, Piqua, Miami County, Ohio (Site).

PROJECT BACKGROUND

The Site is owned by the City of Piqua and was operated as the City of Piqua's Water Treatment Plant until 2017. Energy Safety Response Group (ESRG) operated at the Site from 2018 until September 2023, conducting testing, including open burning, of lithium-ion batteries and testing/training associated fire fighting techniques. The general Site location is shown on **Figure 1 (Attachment 1)**.

On September 26, 2023, the Ohio Environmental Protection Agency (Ohio EPA) issued a Notice of Violation (NOV) letter to Mr. Nick Warner (care of The Stevens Law Firm, Ltd.), regarding ESRG operations at the Site. The NOV letter was the result of an inspection conducted by the Ohio EPA and the Regional Air Pollution Control Agency (RAPCA) following complaints of open burning of lithium-ion batteries at the Site. On the day of the inspection, ESRG agreed to cease all destructive battery testing activities that result in air contaminant emissions.

Water that was generated as part of ESRG's lithium-ion battery testing was contained in on-Site sumps. ESRG collected waste characterization samples of the wastewater on May 5, 2023 and September 28, 2023. The waste characterization samples collected on May 28, 2023 were submitted to Alloway Laboratory and the September 28, 2023 waste characterization samples were submitted to ALS Environmental Laboratory for analyses. The results of the waste characterization analyses are presented on **Table 1 (Attachment 2)**. The test parameters listed in **Table 1** were used as the analytical list to evaluate the water and wipe samples collected from areas surrounding the Site.

OBJECTIVE

WSP USA was contracted by the City of Piqua to conduct sampling to evaluate for potential off-Site impacts. The objective of the sampling event was to evaluate drinking water quality, surface water quality, and residue on surfaces for chemicals of concern associated with burning of lithium-ion batteries.

WSP USA collected samples of potable water from the City's Water Treatment Plant and the water fountain located at Roadside Dog Park. WSP USA collected a surface water sample from each of the City's three (3) surface water intake locations and a surface water sample from the Great Miami River upstream of the City's intake locations. WSP USA collected two (2) wipe samples to evaluate for residue, such as particulates/dust, on impervious surfaces. One wipe sample was collected from the west side of the water fountain, between the dog water spigot/bowl and the human water spigot. The second residue wipe sample was collected from the western support rafter, near the center support column.

Surface Water Sampling Procedures

On November 1, 2023, WSP USA collected surface water samples in the vicinity of the City of Piqua's surface water intakes located at Swift Run Lake (Sample ID: SRL-110123), the Great Miami River (Sample ID: GMR-110123), and the Quarry Pump House (Sample ID: QPH-110123). In addition, WSP USA collected an upstream surface water sample from the Great Miami River (Sample ID: GMRU-110123) northeast of the intersection of Piqua Lockington Road and Clevenger Road. The approximate surface water sampling locations are shown on **Figure 2 (Attachment 1)**.

The surface water samples were collected using a telescopic sampling device that was fitted with a disposable, high-density polyethylene (HDPE) laboratory supplied sample collection container (SCC). The disposable HDPE SCC was attached to the sampling device using cable ties and was slowly "dipped" into the surface water to collect an aliquot of the surface water sample. The surface water sample was retrieved and then poured directly from the disposable HDPE SCC into laboratory-provided containers for the requested analyses. After each use, the disposable HDPE SCC was discarded, and a new HDPE SCC was used to collect the next surface water sample. The surface water samples were labeled and placed on ice in a cooler pending shipment to the laboratory for analyses.

Potable Water Sampling Procedures

In addition to the surface water samples, WSP USA collected two samples of the City of Piqua's potable water on November 1, 2023. A sample of the City's potable water was collected from the compliance tap/spigot located at the Water Treatment Plant, 9801 OH-66, Piqua, Ohio (Sample ID: WTP-110123). The compliance spigot was flowing when WSP USA arrived onsite. The potable water sample was collected directly from the compliance tap/spigot into the appropriate laboratory-provided containers.

The second potable water sample was collected from the spigot at the dog water fountain (Sample ID: RDPF-110123) in Roadside Dog Park, located adjacent to the Site. The fountain was operated for approximately 30 seconds prior to collecting the sample in the appropriate

laboratory supplied containers. The location of the City of Piqua's Water Treatment Plant and the dog water fountain are shown on **Figure 2 (Attachment 1)**. The potable water samples were labeled and placed on ice in a cooler pending shipment to the laboratory for analyses.

Residue Wipe Sampling Procedures

WSP USA performed residue wipe sampling at two locations within the Roadside Dog Park. One residue wipe sample (Sample ID: RDPF-110123) was collected from the west side of the dog water fountain, approximately halfway between the dog water spigot/bowl and the human spigot/bowl. The second residue wipe sample (Sample ID: RDPS-110123) was collected from the 2-inch by 6-inch support truss located on the western side, above the center support post of the shelter house located at Roadside Dog Park.

The residue wipe samples were collected using wipe sampling kits prepared and provided by the laboratory. Each residue wipe sample kit consisted of a piece of gauze placed in a 4-ounce (oz) glass jar, deionized water, and a disposable dropper. To collect the residue wipe sample, the gauze sampling pad was removed from the 4-oz jar and wetted with deionized water using the laboratory-provided dropper. The residue wipe sample was collected by rubbing the wipe on the impervious surface within a 100 square centimeter (cm) area. The sample area was defined using a Teflon residue wipe sample template that has a 10 cm by 10 cm square opening in the center of the template. The gauze pad was wiped vertically then horizontally in a zig-zag pattern within the sampling area to collect any residue. The gauze was returned to the 4-oz jar, sealed, labeled, and placed in a cooler on ice pending shipment to the laboratory.

In addition to the two surface residue wipe samples, a field blank residue wipe sample (Sample ID: RDPFB-110123) was collected. The field blank residue wipe sample was collected by opening the 4-oz jar, removing the gauze sampling pad, wetting the gauze sampling pad with deionized water, waving it for approximately 30 second in the air, and returning it to the 4-oz jar. Once the field blank sample had been collected, it was placed in a cooler on ice pending shipment to the laboratory.

Laboratory Analyses

The surface water, potable water, and residue wipe samples were submitted to Summit Environmental Technologies, Inc. (SET) laboratory located in Cuyahoga Falls, Ohio.

The surface water samples and potable water samples were analyzed for the following:

- Inorganic compounds by method 200.7/200.8: aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, calcium, chromium, cobalt, copper, iron, lead, lithium, magnesium, manganese, molybdenum, nickel, phosphorus, potassium, selenium, silicon, silver, sodium, strontium, thallium, tin, titanium, vanadium, and zinc
- Anions by method 300: bromide, chloride, fluoride, nitrate as N, nitrite as N, phosphate (total as P), and sulfate
- Anions by method 4500 P-E: phosphate (total as PO₄)

The residue wipe samples were analyzed for the following parameters:

- Inorganic compounds by method 6010: aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, calcium, chromium, cobalt, copper, iron, lead, lithium, magnesium, manganese, molybdenum, nickel, phosphorus, potassium, selenium, silicon, silver, sodium, strontium, thallium, tin, titanium, vanadium, and zinc

Analytical Results

Water Samples

The analytical results for the surface water and potable water samples are provided in **Table 2 (Attachment 2)**. **Table 2** also includes the following regulatory criteria for comparison purposes: US EPA Maximum Contaminant Levels (MCLs), US EPA Secondary MCLs (SMCLs), US EPA Regional Screening Levels for Residential Tap Water (Hazard Index = 1), and Ohio EPA Drinking Water Standards for Ohio Public Water Systems. The concentration of copper detected in potable water sample RDP-110123 from the Roadside Dog Park exceeded the US EPA SMCL of 1.0 milligrams per Liter (mg/L) and OEPA Drinking Water Standard for Ohio Public Water Systems Action Level of 1.3 mg/L. The remaining inorganic parameters detected in the potable water samples were less than regulatory criteria.

Concentrations of aluminum, iron, and manganese detected in the surface water sample collected from Swift Run Lake were higher than the respective SMCLs of 0.05 to 0.2 mg/L (aluminum), 0.3 mg/L (iron), and 0.05 mg/L (manganese). The remaining inorganic parameters detected in the surface water samples were less than drinking water criteria shown in **Table 2**. The following anions were detected in the four surface water samples: chloride, fluoride, nitrate, and sulfate. The anion concentrations were less than the MCLs and SMCLs. Orthophosphate was detected in the samples collected from the Great Miami River; however, the concentration in the upstream sample (GMRU-110123) was higher than the concentration at the intake (GMR-110123).

Residue Wipe Sample

The analytical results for the residue wipe samples are shown on **Table 3 (Attachment 2)**. Calcium and magnesium were identified on both wipe samples as well as in the field blank. It should be noted that calcium was also detected in the laboratory method blank at a concentration greater than the reporting limit of 0.00500 mg/L. Zinc was also detected in residue wipe sample RDPS-110123 at concentration of 0.0201 mg/L.

Conclusion

The data suggests that lithium-ion battery burning operations at the Site have not compromised the quality of the drinking water that the City of Piqua supplies to the community. The drinking water samples collected by WSP USA met the MCLs. Copper, often attributed to corrosion within a plumbing system, was detected in the sample from the water fountain at a concentration above the SMCL and Ohio EPA Drinking Water Standard for Ohio Public Water Systems. The analytical results for surface water samples collected from the three intake locations suggest that the source water is of suitable quality for the City of Piqua water treatment processes.



CLOSING

WSP USA appreciate the opportunity to provide Environmental Consulting Services to the City of Piqua. If you have any questions, please feel free to contact the undersigned at (937) 859-3600.

Sincerely,

A handwritten signature in blue ink, appearing to read 'R E Dornbusch'.

Russell E. Dornbusch
Senior Geologist

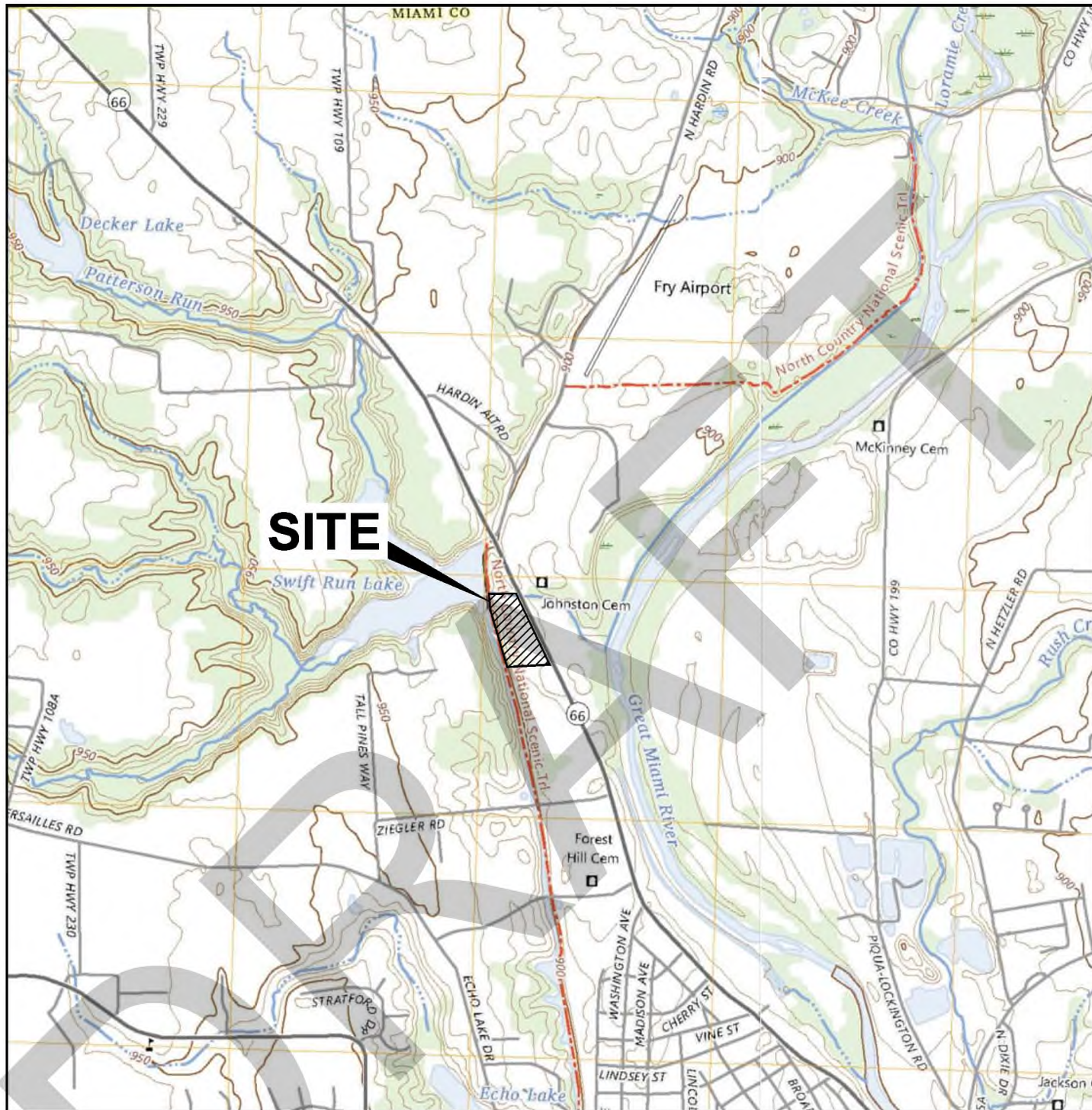
A handwritten signature in blue ink, appearing to read 'L Funk'.

Laura Funk
Senior Project Manager

Attachment Figures, Table, Laboratory Report

DRAFT

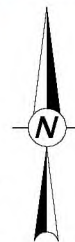
Attachment 1
Figures



Quadrangle Location

REFERENCE: USGS 7.5-minute topographic quadrangle maps of Piqua East and Piqua West, Ohio, 2023.

0 2000 4000
APPROXIMATE SCALE IN FEET



CONSULTANT

WSP USA Environment & Infrastructure Inc.

CONSULTANT



DATE 11/07/2023

DESIGNED —

PREPARED RLB

REVIEWED RED

APPROVED RED/PJS

PROJECT/CLIENT

CITY OF PIQUA
Former Water Treatment Plant, Piqua, Ohio

TITLE

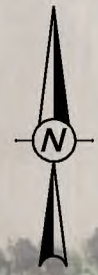
SITE LOCATION MAP

PROJECT NO.
7775 23 2021

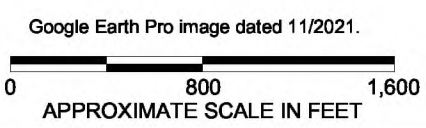
REV.

FIGURE
1

P:\Piqua\Drawings\Piqua Site 2023.dwg - Site - Nov. 07, 2023 10:21am



LEGEND
 Approximate Sample Location



CONSULTANT NAME	
WSP USA Environment & Infrastructure Inc.	
CONSULTANT	DATE 11/07/2023
	DESIGNED ---
	PREPARED RLB
	REVIEWED RED
APPROVED RED/PJS	



CLIENT NAME
CITY OF PIQUA Former Water Treatment Plant, Piqua, Ohio
CLIENT



PROJECT		
ENVIRONMENTAL CONSULTANT SERVICES		
TITLE		
SAMPLE LOCATION MAP		
PROJECT NO. 7775 23 2021	REV.	FIGURE 2

Attachment 2
Tables

Table 1
Waste Water Analytical Results
Former Water Treatment Plant, Piqua, Ohio
all results expressed in milligrams/liter (mg/L)

Date:	City of Piqua Local NPDES Limits (mg/L)	Alloway Laboratory				ALS Environmental Laboratory				
		House IBC Comp	Fire House Room	House Outside Pit North	House Outside Pit South	Composite A	Composite B	North Basin	South Basin	Burn Room Basin
		5/16/2023	5/16/2023	5/16/2023	5/16/2023	9/28/2023	9/28/2023	9/28/2023	9/28/2023	9/28/2023
Anions										
Phosphate	NE	—	—	—	—	<2.0	4.4	2.1	<2.0	<2.0
Inorganics										
Aluminum (Al)	NE	31	25	26	0.37	1.5	2.4	<0.50	0.54	1.4
Barium (Ba)	NE	<0.050	3.4	0.39	0.027	<0.10	<0.10	<0.10	<0.10	0.14
Boron (B)	NE	1.3	0.19	1.9	0.076	0.16	0.19	0.12	<0.10	7.6
Calcium (Ca)	NE	61.2	137	21.9	18.5	27	29	11	12	47
Chromium (Cr)	38.2	0.090	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010	0.041	0.021
Cobalt (Co)	NE	1.4	17	100	1.4	0.48	3.0	0.097	0.022	0.45
Iron (Fe)	NE	15	50	1.1	0.74	<0.20	9.1	0.37	0.29	1.7
Lithium (Li)	NE	0.2	<0.50	<1.0	0.032	17	20	14	5.5	15
Magnesium (Mg)	NE	22.8	9.70	2.47	2.93	1.4	2.8	1.5	0.66	2.2
Manganese (Mn)	NE	4.7	17	120	5.3	0.91	3.8	0.97	0.36	3.8
Molybdenum (Mo)	10.0	<0.050	<0.050	<0.050	<0.010	<0.10	<0.10	<0.10	<0.10	<0.10
Nickel (Ni)	31.4	2.4	33	0.22	1.4	0.71	6.9	0.21	0.069	1.3
Phosphorus (P)	NE	47.1	19.6	5.62	2.29	0.88	3.8	1.7	0.37	2.0
Potassium (K)	NE	17	9.8	19	10	9.5	11	12	9.4	12
Silicon (Si)	NE	32.3	13.4	5.46	4.04	1.5	3.7	1.9	1.3	2.8
Silver (Ag)	1.2	0.0018	<0.0010	<0.0010	<0.0010	<0.050	<0.050	<0.050	<0.050	<0.050
Sodium (Na)	NE	55.9	8.02	14.0	6.83	7.2	9.3	7.0	4.4	15
Strontium (Sr)	NE	0.40	0.49	0.12	0.069	<0.10	<0.10	<0.10	<0.10	0.13
Tin (Sn)	NE	0.12	0.28	0.062	<0.010	<0.10	<0.10	<0.10	<0.10	<0.10
Titanium (Ti)	NE	0.35	0.39	0.88	<0.010	<0.10	<0.10	<0.10	<0.10	<0.10
Vanadium (V)	NE	<0.050	<0.050	<0.050	<0.010	<0.050	<0.050	<0.050	<0.050	<0.050
Zinc (Zn)	32.2	72	3.2	4.8	0.82	0.26	1.2	0.26	<0.20	<0.20
Inorganics										
Antimony (Sb)	NE	0.2	0.12	0.25	0.016	0.10	0.16	0.070	0.021	0.016
Arsenic (As)	2.5	<0.015	<0.015	<0.015	<0.0030	<0.010	0.050	<0.010	<0.010	<0.010
Beryllium (Be)	NE	<0.0025	<0.0025	<0.0025	<0.0005	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)	1.5	<0.0025	<0.0025	<0.0025	<0.0005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Copper (Cu)	50.2	1.2	4.7	0.66	0.016	<0.025	0.19	0.049	0.026	0.16
Lead (Pb)	14.4	0.024	0.070	0.037	0.0043	<0.015	0.049	0.018	<0.015	<0.015
Selenium (Se)	2.7	<0.025	<0.025	0.062	<0.0050	<0.030	<0.030	<0.030	<0.030	<0.030
Thallium (Tl)	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.050	<0.050	<0.050	<0.050	<0.050
Anions										
Bromide	NE	—	—	—	—	2.3	<2.0	<2.0	<2.0	<2.0
Chloride	NE	140	9.1	58	5.3	19	17	7.3	2.6	8.7
Fluoride	NE	152	45.5	194	5.55	32	34	26	6.0	25
Nitrate/Nitrite-N	NE	0.59	<0.50	<0.50	<0.50	—	—	—	—	—
Nitrate-N	NE	—	—	—	—	<0.45	<0.45	0.62	0.59	<0.45
Nitrite-N	NE	—	—	—	—	<0.61	<0.61	<0.61	<0.61	<0.61
Orthophosphate-P	NE	144	59.9	17.2	7.02	<0.65	1.4	0.70	<0.65	<0.65
Sulfate	NE	63	160	48	5.7	69	51	17	8.3	52

Local NPDES Limits = Discharge Limits Specific to the City of Piqua's Waste Water Treatment Plant NPDES Permit

Detected values are **Bolded**

— - Not analyzed

NE = None established

Table 2
November 2023 Surface Water/Drinking Water Analytical Results
City of Piqua, Ohio
all results expressed in milligrams/liter (mg/L)

Sample Date:	Drinking Water Standard	Potable Water	Roadside Dog Park	Great Miami River	Swift Run Lake	Surface Water	Quarry Pump House	Great Miami River Upstream
		Water Treatment Plant						
		(WTP-110123)	(RDP-110123)	(GMR-110123)	(SRL-110123)	(SRL-110123)	(QPH-110123)	(GMRU-110123)
		11/1/2023	11/1/2023	11/1/2023	11/1/2023	11/1/2023	11/1/2023	11/1/2023
Inorganics	MCL							
Antimony (Sb)	0.006	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Arsenic (As)	0.010	<0.00100	<0.00100	0.00163	0.00429	<0.00100	0.00146	0.00146
Barium (Ba)	2.0	<0.0200	<0.0200	0.0807	0.0629	0.0275	0.0934	0.0934
Beryllium (Be)	0.004	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Cadmium (Cd)	0.005	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Chromium (Cr)	0.1	<0.00800	<0.00800	<0.00800	<0.00800	<0.00800	<0.00800	<0.00800
Selenium (Se)	0.05	0.00119	0.00113	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Thallium (Tl)	0.002	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100

Inorganics	SMCL							
Aluminum (Al)	0.05 to 0.2	<0.100	<0.100	<0.100	0.232	<0.100	<0.100	<0.100
Copper (Cu)	1.0	0.00531	1.58	<0.00100	0.00177	0.00699	<0.00100	<0.00100
Iron (Fe)	0.3	<0.0200	0.0378	0.197	0.457	0.0464	0.163	0.163
Manganese (Mn)	0.05	<0.0200	<0.0200	<0.0200	0.111	<0.0200	<0.0200	<0.0200
Silver (Ag)	0.1	<0.00400	<0.00400	<0.00400	<0.00400	<0.00400	<0.00400	<0.00400
Zinc (Zn)	5.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200

Inorganics	RSL							
Boron (B)	4.0	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
Cobalt (Co)	0.006	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200
Lithium (Li)	0.04	<0.00840	<0.00840	<0.00840	<0.00840	<0.00840	<0.00840	<0.00840
Molybdenum (Mo)	0.1	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200
Strontium (Sr)	12.0	0.698	0.668	2.41	1.52	0.266	1.76	1.76
Tin (Sn)	12.0	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
Vanadium (V)	0.1	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500

Inorganics	AL							
Copper (Cu)	1.3	0.00531	1.58	<0.00100	0.00177	0.00699	<0.00100	<0.00100
Lead (Pb)	0.015	<0.00100	0.00179	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100

Inorganics								
Calcium (Ca)	NE	32.3	24.2	82.2	69.3	22.5	82.9	82.9
Magnesium (Mg)	NE	18.3	15.5	36.5	33.0	30.0	35.2	35.2
Nickel (Ni)	NE	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200
Phosphorus (P)	NE	<0.500	0.594	<0.500	<0.500	<0.500	<0.500	<0.500
Potassium (K)	NE	5.36	5.30	5.83	4.64	2.44	3.86	3.86
Silicon (Si)	NE	2.27	1.79	3.36	3.21	2.85	4.03	4.03
Sodium (Na)	NE	40.1	44.3	42.2	28.2	21.7	28.4	28.4
Titanium (Ti)	NE	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200

Anions	MCL							
Fluoride	4.0	0.671	0.668	0.380	0.323	0.156	0.354	0.354
Nitrate-N	10	0.803	0.653	0.616	0.0939	0.0838	0.862	0.862
Nitrite-N	1.0	<0.0330	<0.0330	<0.0330	<0.0330	<0.0330	<0.0330	<0.0330

Anions	SMCLs							
Chloride	250	50.0	54.6	47.5	46.3	38.6	41.7	41.7
Sulfate	250	73.3	74.7	83.1	40.2	31.7	48.9	48.9

Anions								
Bromide	NE	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
Orthophosphate-P	NE	0.296	0.360	0.300	<0.160	<0.160	0.416	0.416

Calculated Analytes								
Phosphate	NE	<1.00	1.82	1.01	<1.00	<1.00	1.27	1.27

MCL = Maximum Contaminant Level
SMCL = Secondary Maximum Contaminant Levels
RSL = US EPA Regional Screening Levels, Residential Tap Water Noncancer Child Hazard Index (HI) = 1
AL = OEPA Drinking Water Standards for Ohio Public Water Systems
Detected values are **Bolded**
Values over action level are **bolded** and shaded
NE= *None established*

Table 3
November 2023 Wipe Samples Analytical Results
Roadside Dog Park, Piqua, Ohio
all results expressed in milligrams/wipe (mg/wipe)

	Roadside Dog Park Fountain (RDPF-110123) 11/1/2023	Roadside Dog Park Shelter (RDPS-110123) 11/1/2023	Roadside Dog Park Field Blank (RDPFB-110123) 11/1/2023
Metals - 6010			
Aluminum	<0.00500	<0.00500	<0.00500
Antimony	<0.00500	<0.00500	<0.00500
Arsenic	<0.00500	<0.00500	<0.00500
Barium	<0.00500	<0.00500	<0.00500
Beryllium	<0.00500	<0.00500	<0.00500
Boron	<0.00500	<0.00500	<0.00500
Cadmium	<0.00500	<0.00500	<0.00500
Calcium	0.0588 (B)	0.0791 (B)	0.0305 (B)
Chromium	<0.00500	<0.00500	<0.00500
Cobalt	<0.00500	<0.00500	<0.00500
Copper	<0.00500	<0.00500	<0.00500
Iron	<0.00500	<0.00500	<0.00500
Lead	<0.00500	<0.00500	<0.00500
Lithium	<0.00500	<0.00500	<0.00500
Magnesium	0.0314	0.0392	0.0312
Manganese	<0.00500	<0.00500	<0.00500
Molybdenum	<0.00500	<0.00500	<0.00500
Nickel	<0.00500	<0.00500	<0.00500
Phosphorus	<0.0500	<0.0500	<0.0500
Potassium	<0.100	<0.100	<0.100
Selenium	<0.00500	<0.00500	<0.00500
Silicon	<0.200	<0.200	<0.100
Silver	<0.00500	<0.00500	<0.00500
Sodium	<1.00	<1.00	<1.00
Strontium	<0.00500	<0.00500	<0.00500
Thallium	<0.00500	<0.00500	<0.00500
Tin	<0.00500	<0.00500	<0.00500
Titanium	<0.0500	<0.0500	<0.0500
Vanadium	<0.00500	<0.00500	<0.00500
Zinc	<0.00500	0.0201	<0.00500

Detected values are **Bolded**

B = The analyte was detected in the Method Blank at a concentration greater than the reporting limit.

Attachment 3
Laboratory Report



Summit Environmental Technologies, Inc.

3310 Win St.

Cuyahoga Falls, Ohio 44223

TEL: (330) 253-8211 FAX: (330) 253-4489

Website: <http://www.settek.com>

November 09, 2023

Rusty Dornbusch
WSP Global Inc
521 Byers Rd.
Suite 204
Miamisburg, OH 45342
TEL: (937) 859-3600
FAX:

RE: City of Piqua (Revised)

Dear Rusty Dornbusch:

Order No.: 23110097

Summit Environmental Technologies, Inc. received 9 sample(s) on 11/1/2023 for the analyses presented in the following report.

There were no problems with the analytical events associated with this report unless noted in the Case Narrative.

Quality control data is within laboratory defined or method specified acceptance limits except where noted.

If you have any questions regarding these tests results, please feel free to call the laboratory.

Sincerely,

Salwa A. Najjar
Project Manager

3310 Win St.
Cuyahoga Falls, Ohio 44223

Arkansas 88-0735, California 2943, Colorado, Connecticut PH-0108, Florida NELAC E87688, Idaho OH00923, Illinois 200061, Indiana C-OH-13, ISO/IEC 17025:2017 119125 L22-544, Kansas E-10347, Kentucky (Underground Storage Tank) 3, Kentucky 90146, Maryland 339, Michigan 9988, Minnesota 1780279, Nevada OH009232020-1, New Hampshire 2996, New Jersey OH006, New York 11777, North Carolina 39705 and 631, North Dakota R-201, Ohio DW, Ohio VAP CL0052, Oklahoma 2019-155, Oregon OH200001, Pennsylvania 68-01335, Rhode Island LA000317, South Carolina 92016001, Texas T104704466-19-16, Utah OH009232020-12, Virginia VELAP 10381, West Virginia 9957C



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Case Narrative

WO#: 23110097
Date: 11/9/2023

CLIENT: WSP Global Inc
Project: City of Piqua (Revised)

WorkOrder Narrative:

23110097: This report in its entirety consists of the following documents: Cover Letter, Case Narrative, Analytical Results, QC Summary Report, Applicable Accreditation Information, Chain-of-Custody, Cooler Receipt Form, and other applicable forms as necessary. All documents contain the Summit Environmental Technologies, Inc., Work Order Number assigned to this report.

Summit Environmental Technologies, Inc., holds the accreditations/certifications listed at the bottom of the cover letter that may or may not pertain to this report. Please refer to the "Accreditation Program Analytes Report" for accredited analytes list.

The information contained in this analytical report is the sole property of Summit Environmental Technologies, Inc. and that of the customer. It cannot be reproduced in any form without the consent of Summit Environmental Technologies, Inc. or the customer for which this report was issued. The results contained in this report are only representative of the samples received. Conditions can vary at different times and at different sampling conditions. Summit Environmental Technologies, Inc. is not responsible for use or interpretation of the data included herein.

All results for Solid Samples are reported on an "as received" or "wet weight" basis unless indicated as "dry weight" using the "-dry" designation on the reporting units.

This report is believed to meet all of the requirements of the accrediting agency, where applicable. Any comments or problems with the analytical events associated with this report are noted below.

Analytical Sequence Sample Notes:

23110097-007A through 009A Mtl-ICP_Wipe(6010D): MB exhibited detections for Silicon and Tin. Sample is ND for these analytes. Possible high bias for Calcium due to detection in MB.

23110097-002A/DUP and 004A/DUP Mtl-ICPMS_DW(200.8): Corresponding DUP exhibited high RPD due to detections < PQL.

Revised Report 11/9/23 -SN
Revision to case narrative.

Revision v1



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Workorder Sample Summary

WO#: 23110097
09-Nov-23

CLIENT: WSP Global Inc
Project: City of Piqua (Revised)

Lab SampleID	Client Sample ID	Tag No	Date Collected	Date Received	Matrix
23110097-001	RDP-110123		11/1/2023 8:45:00 AM	11/1/2023 4:15:00 PM	Drinking Water
23110097-001	RDP-110123		11/1/2023 8:45:00 AM	11/1/2023 4:15:00 PM	Drinking Water
23110097-002	WTP-110123		11/1/2023 9:07:00 AM	11/1/2023 4:15:00 PM	Drinking Water
23110097-002	WTP-110123		11/1/2023 9:07:00 AM	11/1/2023 4:15:00 PM	Drinking Water
23110097-003	SRL-110123		11/1/2023 8:38:00 AM	11/1/2023 4:15:00 PM	Non-Potable Water
23110097-003	SRL-110123		11/1/2023 8:38:00 AM	11/1/2023 4:15:00 PM	Non-Potable Water
23110097-004	GMR-110123		11/1/2023 8:55:00 AM	11/1/2023 4:15:00 PM	Non-Potable Water
23110097-004	GMR-110123		11/1/2023 8:55:00 AM	11/1/2023 4:15:00 PM	Non-Potable Water
23110097-005	GMRU-110123		11/1/2023 9:25:00 AM	11/1/2023 4:15:00 PM	Non-Potable Water
23110097-005	GMRU-110123		11/1/2023 9:25:00 AM	11/1/2023 4:15:00 PM	Non-Potable Water
23110097-006	QPH-110123		11/1/2023 9:38:00 AM	11/1/2023 4:15:00 PM	Non-Potable Water
23110097-006	QPH-110123		11/1/2023 9:38:00 AM	11/1/2023 4:15:00 PM	Non-Potable Water
23110097-007	RDPF-110123		11/1/2023 8:14:00 AM	11/1/2023 4:15:00 PM	Wipe
23110097-008	RDPS-110123		11/1/2023 8:19:00 AM	11/1/2023 4:15:00 PM	Wipe
23110097-009	RDPFB-110123		11/1/2023 8:23:00 AM	11/1/2023 4:15:00 PM	Wipe



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Analytical Report

(consolidated)

WO#: 23110097

Date Reported: 11/9/2023

CLIENT: WSP Global Inc
Project: City of Piqua (Revised)
Lab ID: 23110097-001
Client Sample ID: RDP-110123

Collection Date: 11/1/2023 8:45:00 AM

Matrix: DRINKING WATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
CALCULATED ANALYTES						
					METALS-CALC E200.7	Analyst: RJE
Phosphate	1.82	1.00			1	11/3/2023 10:44:00 AM
METALS (200.7)					E200.7	Analyst: RJE
Aluminum(Al)	ND	0.100		mg/L	1	11/3/2023 10:44:00 AM
Barium(Ba)	ND	0.0200		mg/L	1	11/3/2023 10:44:00 AM
Boron(B)	ND	0.100		mg/L	1	11/3/2023 10:44:00 AM
Calcium(Ca)	24.2	1.00		mg/L	1	11/3/2023 10:44:00 AM
Chromium(Cr)	ND	0.00800		mg/L	1	11/3/2023 10:44:00 AM
Cobalt(Co)	ND	0.0200		mg/L	1	11/3/2023 10:44:00 AM
Iron(Fe)	0.0378	0.0200		mg/L	1	11/3/2023 10:44:00 AM
Magnesium(Mg)	15.5	5.00		mg/L	10	11/6/2023 8:48:00 AM
Manganese(Mn)	ND	0.0200		mg/L	1	11/3/2023 10:44:00 AM
Molybdenum(Mo)	ND	0.0200		mg/L	1	11/3/2023 10:44:00 AM
Nickel(Ni)	ND	0.0200		mg/L	1	11/3/2023 10:44:00 AM
Phosphorus(P)	0.594	0.500		mg/L	1	11/3/2023 10:44:00 AM
Potassium(K)	5.30	1.00		mg/L	1	11/3/2023 10:44:00 AM
Silicon(Si)	1.79	0.100		mg/L	1	11/3/2023 10:44:00 AM
Silver(Ag)	ND	0.00400		mg/L	1	11/3/2023 10:44:00 AM
Sodium(Na)	44.3	2.00		mg/L	1	11/3/2023 10:44:00 AM
Strontium(Sr)	0.668	0.100		mg/L	1	11/3/2023 10:44:00 AM
Tin(Sn)	ND	0.100		mg/L	1	11/3/2023 10:44:00 AM
Titanium(Ti)	ND	0.0200		mg/L	1	11/3/2023 10:44:00 AM
Vanadium(V)	ND	0.0500		mg/L	1	11/3/2023 10:44:00 AM
Zinc(Zn)	ND	0.0200		mg/L	1	11/3/2023 10:44:00 AM
UCMR5-LI METALS (200.7)					E200.7	Analyst: RJE
Lithium(Li)	ND	0.00840		mg/L	1	11/5/2023 9:14:00 AM
METALS (200.8)					E200.8	Analyst: RJE
Antimony(Sb)	ND	0.00100		mg/L	1	11/3/2023 11:18:43 AM
Arsenic(As)	ND	0.00100		mg/L	1	11/3/2023 11:18:43 AM

Qualifiers:
B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected
R RPD outside accepted recovery limits
W Sample container temperature is out of limit as specified at testcode

E Value above quantitation range
M Manual Integration used to determine area response
PL Permit Limit
RL Reporting Detection Limit

Revision v1



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Analytical Report

(consolidated)

WO#: 23110097

Date Reported: 11/9/2023

CLIENT: WSP Global Inc
Project: City of Piqua (Revised)
Lab ID: 23110097-001
Client Sample ID: RDP-110123

Collection Date: 11/1/2023 8:45:00 AM

Matrix: DRINKING WATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
METALS (200.8)				E200.8	E200.8	Analyst: RJE
Beryllium(Be)	ND	0.00100		mg/L	1	11/3/2023 11:18:43 AM
Cadmium(Cd)	ND	0.00100		mg/L	1	11/3/2023 11:18:43 AM
Copper(Cu)	1.58	0.100	*	mg/L	100	11/6/2023 7:15:09 AM
Lead(Pb)	0.00179	0.00100		mg/L	1	11/3/2023 11:18:43 AM
Selenium(Se)	0.00113	0.00100		mg/L	1	11/3/2023 11:18:43 AM
Thallium(Tl)	ND	0.00100		mg/L	1	11/3/2023 11:18:43 AM
ANIONS ANALYSIS BY IC (EPA 300.0)				E300.0		Analyst: TAL
Bromide	ND	0.100		mg/L	1	11/2/2023 10:47:00 AM
Chloride	54.6	5.00		mg/L	5	11/2/2023 1:25:00 PM
Fluoride	0.668	0.100	m	mg/L	1	11/2/2023 10:47:00 AM
Nitrate-N	0.653	0.0230		mg/L	1	11/2/2023 10:47:00 AM
Nitrite-N	ND	0.0330		mg/L	1	11/2/2023 10:47:00 AM
Orthophosphate-P	0.360	0.160		mg/L	1	11/2/2023 10:47:00 AM
Sulfate	74.7	5.00		mg/L	5	11/2/2023 1:25:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

Revision v1



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Analytical Report

(consolidated)

WO#: 23110097

Date Reported: 11/9/2023

CLIENT: WSP Global Inc
Project: City of Piqua (Revised)
Lab ID: 23110097-002
Client Sample ID: WTP-110123

Collection Date: 11/1/2023 9:07:00 AM

Matrix: DRINKING WATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
CALCULATED ANALYTES						
				METALS-CALC	E200.7	Analyst: RJE
Phosphate	ND	1.00			1	11/3/2023 10:47:00 AM
METALS (200.7)				E200.7	E200.7	Analyst: RJE
Aluminum(Al)	ND	0.100		mg/L	1	11/3/2023 10:47:00 AM
Barium(Ba)	ND	0.0200		mg/L	1	11/3/2023 10:47:00 AM
Boron(B)	ND	0.100		mg/L	1	11/3/2023 10:47:00 AM
Calcium(Ca)	32.3	10.0		mg/L	10	11/6/2023 8:52:00 AM
Chromium(Cr)	ND	0.00800		mg/L	1	11/3/2023 10:47:00 AM
Cobalt(Co)	ND	0.0200		mg/L	1	11/3/2023 10:47:00 AM
Iron(Fe)	ND	0.0200		mg/L	1	11/3/2023 10:47:00 AM
Magnesium(Mg)	18.3	5.00		mg/L	10	11/6/2023 8:52:00 AM
Manganese(Mn)	ND	0.0200		mg/L	1	11/3/2023 10:47:00 AM
Molybdenum(Mo)	ND	0.0200		mg/L	1	11/3/2023 10:47:00 AM
Nickel(Ni)	ND	0.0200		mg/L	1	11/3/2023 10:47:00 AM
Phosphorus(P)	ND	0.500		mg/L	1	11/3/2023 10:47:00 AM
Potassium(K)	5.36	1.00		mg/L	1	11/3/2023 10:47:00 AM
Silicon(Si)	2.27	0.100		mg/L	1	11/3/2023 10:47:00 AM
Silver(Ag)	ND	0.00400		mg/L	1	11/3/2023 10:47:00 AM
Sodium(Na)	40.1	2.00		mg/L	1	11/3/2023 10:47:00 AM
Strontium(Sr)	0.698	0.100		mg/L	1	11/3/2023 10:47:00 AM
Tin(Sn)	ND	0.100		mg/L	1	11/3/2023 10:47:00 AM
Titanium(Ti)	ND	0.0200		mg/L	1	11/3/2023 10:47:00 AM
Vanadium(V)	ND	0.0500		mg/L	1	11/3/2023 10:47:00 AM
Zinc(Zn)	ND	0.0200		mg/L	1	11/3/2023 10:47:00 AM
UCMR5-LI METALS (200.7)				E200.7	E200.7	Analyst: RJE
Lithium(Li)	ND	0.00840		mg/L	1	11/5/2023 9:18:00 AM
METALS (200.8)				E200.8	E200.8	Analyst: RJE
Antimony(Sb)	ND	0.00100		mg/L	1	11/3/2023 11:34:11 AM
Arsenic(As)	ND	0.00100		mg/L	1	11/3/2023 11:34:11 AM

Qualifiers:
B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected
R RPD outside accepted recovery limits
W Sample container temperature is out of limit as specified at testcode

E Value above quantitation range
M Manual Integration used to determine area response
PL Permit Limit
RL Reporting Detection Limit

Revision v1



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Analytical Report

(consolidated)

WO#: 23110097

Date Reported: 11/9/2023

CLIENT: WSP Global Inc
Project: City of Piqua (Revised)
Lab ID: 23110097-002
Client Sample ID: WTP-110123

Collection Date: 11/1/2023 9:07:00 AM

Matrix: DRINKING WATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
METALS (200.8)					E200.8	E200.8 Analyst: RJE
Beryllium(Be)	ND	0.00100		mg/L	1	11/3/2023 11:34:11 AM
Cadmium(Cd)	ND	0.00100		mg/L	1	11/3/2023 11:34:11 AM
Copper(Cu)	0.00531	0.00100		mg/L	1	11/3/2023 11:34:11 AM
Lead(Pb)	ND	0.00100		mg/L	1	11/3/2023 11:34:11 AM
Selenium(Se)	0.00119	0.00100		mg/L	1	11/3/2023 11:34:11 AM
Thallium(Tl)	ND	0.00100		mg/L	1	11/3/2023 11:34:11 AM
ANIONS ANALYSIS BY IC (EPA 300.0)					E300.0	E300.0 Analyst: TAL
Bromide	ND	0.100		mg/L	1	11/2/2023 11:13:00 AM
Chloride	50.0	5.00		mg/L	5	11/2/2023 1:52:00 PM
Fluoride	0.671	0.100	m	mg/L	1	11/2/2023 11:13:00 AM
Nitrate-N	0.803	0.0230		mg/L	1	11/2/2023 11:13:00 AM
Nitrite-N	ND	0.0330		mg/L	1	11/2/2023 11:13:00 AM
Orthophosphate-P	0.296	0.160		mg/L	1	11/2/2023 11:13:00 AM
Sulfate	73.3	5.00		mg/L	5	11/2/2023 1:52:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

Revision v1



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Analytical Report

(consolidated)

WO#: 23110097

Date Reported: 11/9/2023

CLIENT: WSP Global Inc
Project: City of Piqua (Revised)
Lab ID: 23110097-003
Client Sample ID: SRL-110123

Collection Date: 11/1/2023 8:38:00 AM

Matrix: NON-POTABLE WATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
CALCULATED ANALYTES						
					METALS-CALC E200.7	Analyst: RJE
Phosphate	ND	1.00			1	11/3/2023 10:50:00 AM
METALS (200.7)					E200.7	Analyst: RJE
Aluminum(Al)	0.232	0.100	*	mg/L	1	11/3/2023 10:50:00 AM
Barium(Ba)	0.0629	0.0200		mg/L	1	11/3/2023 10:50:00 AM
Boron(B)	ND	0.100		mg/L	1	11/3/2023 10:50:00 AM
Calcium(Ca)	69.3	20.0		mg/L	20	11/6/2023 8:55:00 AM
Chromium(Cr)	ND	0.00800		mg/L	1	11/3/2023 10:50:00 AM
Cobalt(Co)	ND	0.0200		mg/L	1	11/3/2023 10:50:00 AM
Iron(Fe)	0.457	0.0200	*	mg/L	1	11/3/2023 10:50:00 AM
Magnesium(Mg)	33.0	10.0		mg/L	20	11/6/2023 8:55:00 AM
Manganese(Mn)	0.111	0.0200	*	mg/L	1	11/3/2023 10:50:00 AM
Molybdenum(Mo)	ND	0.0200		mg/L	1	11/3/2023 10:50:00 AM
Nickel(Ni)	ND	0.0200		mg/L	1	11/3/2023 10:50:00 AM
Phosphorus(P)	ND	0.500		mg/L	1	11/3/2023 10:50:00 AM
Potassium(K)	4.64	1.00		mg/L	1	11/3/2023 10:50:00 AM
Silicon(Si)	3.21	0.100		mg/L	1	11/3/2023 10:50:00 AM
Silver(Ag)	ND	0.00400		mg/L	1	11/3/2023 10:50:00 AM
Sodium(Na)	28.2	2.00		mg/L	1	11/3/2023 10:50:00 AM
Strontium(Sr)	1.52	0.100		mg/L	1	11/3/2023 10:50:00 AM
Tin(Sn)	ND	0.100		mg/L	1	11/3/2023 10:50:00 AM
Titanium(Ti)	ND	0.0200		mg/L	1	11/3/2023 10:50:00 AM
Vanadium(V)	ND	0.0500		mg/L	1	11/3/2023 10:50:00 AM
Zinc(Zn)	ND	0.0200		mg/L	1	11/3/2023 10:50:00 AM
UCMR5-LI METALS (200.7)					E200.7	Analyst: RJE
Lithium(Li)	ND	0.00840		mg/L	1	11/5/2023 9:22:00 AM
METALS (200.8)					E200.8	Analyst: RJE
Antimony(Sb)	ND	0.00100		mg/L	1	11/3/2023 12:56:38 PM
Arsenic(As)	0.00429	0.00100		mg/L	1	11/3/2023 12:56:38 PM

Qualifiers:
B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected
R RPD outside accepted recovery limits
W Sample container temperature is out of limit as specified at testcode

E Value above quantitation range
M Manual Integration used to determine area response
PL Permit Limit
RL Reporting Detection Limit

Revision v1



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Analytical Report

(consolidated)

WO#: 23110097

Date Reported: 11/9/2023

CLIENT: WSP Global Inc
Project: City of Piqua (Revised)
Lab ID: 23110097-003
Client Sample ID: SRL-110123

Collection Date: 11/1/2023 8:38:00 AM

Matrix: NON-POTABLE WATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
METALS (200.8)				E200.8	E200.8	Analyst: RJE
Beryllium(Be)	ND	0.00100		mg/L	1	11/3/2023 12:56:38 PM
Cadmium(Cd)	ND	0.00100		mg/L	1	11/3/2023 12:56:38 PM
Copper(Cu)	0.00177	0.00100		mg/L	1	11/3/2023 12:56:38 PM
Lead(Pb)	ND	0.00100		mg/L	1	11/3/2023 12:56:38 PM
Selenium(Se)	ND	0.00100		mg/L	1	11/3/2023 12:56:38 PM
Thallium(Tl)	ND	0.00100		mg/L	1	11/3/2023 12:56:38 PM
ANIONS ANALYSIS BY IC (EPA 300.0)				E300.0		Analyst: TAL
Bromide	ND	0.100		mg/L	1	11/2/2023 11:39:00 AM
Chloride	46.3	1.00		mg/L	1	11/2/2023 11:39:00 AM
Fluoride	0.323	0.100	m	mg/L	1	11/2/2023 11:39:00 AM
Nitrate-N	0.0939	0.0230		mg/L	1	11/2/2023 11:39:00 AM
Nitrite-N	ND	0.0330		mg/L	1	11/2/2023 11:39:00 AM
Orthophosphate-P	ND	0.160		mg/L	1	11/2/2023 11:39:00 AM
Sulfate	40.2	1.00		mg/L	1	11/2/2023 11:39:00 AM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

Revision v1



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Analytical Report

(consolidated)

WO#: 23110097

Date Reported: 11/9/2023

CLIENT: WSP Global Inc
Project: City of Piqua (Revised)
Lab ID: 23110097-004
Client Sample ID: GMR-110123

Collection Date: 11/1/2023 8:55:00 AM

Matrix: NON-POTABLE WATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
CALCULATED ANALYTES						
					METALS-CALC E200.7	Analyst: RJE
Phosphate	1.01	1.00			1	11/3/2023 10:54:00 AM
METALS (200.7)					E200.7	Analyst: RJE
Aluminum(Al)	ND	0.100	*	mg/L	1	11/3/2023 10:54:00 AM
Barium(Ba)	0.0807	0.0200		mg/L	1	11/3/2023 10:54:00 AM
Boron(B)	ND	0.100		mg/L	1	11/3/2023 10:54:00 AM
Calcium(Ca)	82.2	20.0		mg/L	20	11/6/2023 9:49:00 AM
Chromium(Cr)	ND	0.00800		mg/L	1	11/3/2023 10:54:00 AM
Cobalt(Co)	ND	0.0200		mg/L	1	11/3/2023 10:54:00 AM
Iron(Fe)	0.197	0.0200		mg/L	1	11/3/2023 10:54:00 AM
Magnesium(Mg)	36.5	10.0		mg/L	20	11/6/2023 9:49:00 AM
Manganese(Mn)	ND	0.0200		mg/L	1	11/3/2023 10:54:00 AM
Molybdenum(Mo)	ND	0.0200		mg/L	1	11/3/2023 10:54:00 AM
Nickel(Ni)	ND	0.0200		mg/L	1	11/3/2023 10:54:00 AM
Phosphorus(P)	ND	0.500		mg/L	1	11/3/2023 10:54:00 AM
Potassium(K)	5.83	1.00		mg/L	1	11/3/2023 10:54:00 AM
Silicon(Si)	3.36	0.100		mg/L	1	11/3/2023 10:54:00 AM
Silver(Ag)	ND	0.00400		mg/L	1	11/3/2023 10:54:00 AM
Sodium(Na)	42.2	2.00		mg/L	1	11/3/2023 10:54:00 AM
Strontium(Sr)	2.41	0.100		mg/L	1	11/3/2023 10:54:00 AM
Tin(Sn)	ND	0.100		mg/L	1	11/3/2023 10:54:00 AM
Titanium(Ti)	ND	0.0200		mg/L	1	11/3/2023 10:54:00 AM
Vanadium(V)	ND	0.0500		mg/L	1	11/3/2023 10:54:00 AM
Zinc(Zn)	ND	0.0200		mg/L	1	11/3/2023 10:54:00 AM
UCMR5-LI METALS (200.7)					E200.7	Analyst: RJE
Lithium(Li)	ND	0.00840		mg/L	1	11/5/2023 9:26:00 AM
METALS (200.8)					E200.8	Analyst: RJE
Antimony(Sb)	ND	0.00100		mg/L	1	11/3/2023 1:27:30 PM
Arsenic(As)	0.00163	0.00100		mg/L	1	11/3/2023 1:27:30 PM

Qualifiers:
B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected
R RPD outside accepted recovery limits
W Sample container temperature is out of limit as specified at testcode

E Value above quantitation range
M Manual Integration used to determine area response
PL Permit Limit
RL Reporting Detection Limit

Revision v1



Summit Environmental Technologies, Inc.
3310 Win St.
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TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

Analytical Report

(consolidated)

WO#: 23110097

Date Reported: 11/9/2023

CLIENT: WSP Global Inc
Project: City of Piqua (Revised)
Lab ID: 23110097-004
Client Sample ID: GMR-110123

Collection Date: 11/1/2023 8:55:00 AM

Matrix: NON-POTABLE WATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
METALS (200.8)				E200.8	E200.8	Analyst: RJE
Beryllium(Be)	ND	0.00100		mg/L	1	11/3/2023 1:27:30 PM
Cadmium(Cd)	ND	0.00100		mg/L	1	11/3/2023 1:27:30 PM
Copper(Cu)	ND	0.00100		mg/L	1	11/3/2023 1:27:30 PM
Lead(Pb)	ND	0.00100		mg/L	1	11/3/2023 1:27:30 PM
Selenium(Se)	ND	0.00100		mg/L	1	11/3/2023 1:27:30 PM
Thallium(Tl)	ND	0.00100		mg/L	1	11/3/2023 1:27:30 PM
ANIONS ANALYSIS BY IC (EPA 300.0)				E300.0		Analyst: TAL
Bromide	ND	0.100		mg/L	1	11/2/2023 12:06:00 PM
Chloride	47.5	5.00		mg/L	5	11/2/2023 2:18:00 PM
Fluoride	0.380	0.100	m	mg/L	1	11/2/2023 12:06:00 PM
Nitrate-N	0.616	0.0230		mg/L	1	11/2/2023 12:06:00 PM
Nitrite-N	ND	0.0330		mg/L	1	11/2/2023 12:06:00 PM
Orthophosphate-P	0.300	0.160		mg/L	1	11/2/2023 12:06:00 PM
Sulfate	83.1	5.00		mg/L	5	11/2/2023 2:18:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

Revision v1



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Analytical Report

(consolidated)

WO#: 23110097

Date Reported: 11/9/2023

CLIENT: WSP Global Inc
Project: City of Piqua (Revised)
Lab ID: 23110097-005
Client Sample ID: GMRU-110123

Collection Date: 11/1/2023 9:25:00 AM

Matrix: NON-POTABLE WATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
CALCULATED ANALYTES						
						Analyst: RJE
Phosphate	1.27	1.00			1	11/3/2023 10:57:00 AM
METALS (200.7)						Analyst: RJE
Aluminum(Al)	ND	0.100	*	mg/L	1	11/3/2023 10:57:00 AM
Barium(Ba)	0.0934	0.0200		mg/L	1	11/3/2023 10:57:00 AM
Boron(B)	ND	0.100		mg/L	1	11/3/2023 10:57:00 AM
Calcium(Ca)	82.9	20.0		mg/L	20	11/6/2023 9:52:00 AM
Chromium(Cr)	ND	0.00800		mg/L	1	11/3/2023 10:57:00 AM
Cobalt(Co)	ND	0.0200		mg/L	1	11/3/2023 10:57:00 AM
Iron(Fe)	0.163	0.0200		mg/L	1	11/3/2023 10:57:00 AM
Magnesium(Mg)	35.2	10.0		mg/L	20	11/6/2023 9:52:00 AM
Manganese(Mn)	ND	0.0200		mg/L	1	11/3/2023 10:57:00 AM
Molybdenum(Mo)	ND	0.0200		mg/L	1	11/3/2023 10:57:00 AM
Nickel(Ni)	ND	0.0200		mg/L	1	11/3/2023 10:57:00 AM
Phosphorus(P)	ND	0.500		mg/L	1	11/3/2023 10:57:00 AM
Potassium(K)	3.86	1.00		mg/L	1	11/3/2023 10:57:00 AM
Silicon(Si)	4.03	0.100		mg/L	1	11/3/2023 10:57:00 AM
Silver(Ag)	ND	0.00400		mg/L	1	11/3/2023 10:57:00 AM
Sodium(Na)	28.4	2.00		mg/L	1	11/3/2023 10:57:00 AM
Strontium(Sr)	1.76	0.100		mg/L	1	11/3/2023 10:57:00 AM
Tin(Sn)	ND	0.100		mg/L	1	11/3/2023 10:57:00 AM
Titanium(Ti)	ND	0.0200		mg/L	1	11/3/2023 10:57:00 AM
Vanadium(V)	ND	0.0500		mg/L	1	11/3/2023 10:57:00 AM
Zinc(Zn)	ND	0.0200		mg/L	1	11/3/2023 10:57:00 AM
UCMR5-LI METALS (200.7)						Analyst: RJE
Lithium(Li)	ND	0.00840		mg/L	1	11/5/2023 9:30:00 AM
METALS (200.8)						Analyst: RJE
Antimony(Sb)	ND	0.00100		mg/L	1	11/3/2023 1:37:50 PM
Arsenic(As)	0.00146	0.00100		mg/L	1	11/3/2023 1:37:50 PM

Qualifiers:
B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected
R RPD outside accepted recovery limits
W Sample container temperature is out of limit as specified at testcode

E Value above quantitation range
M Manual Integration used to determine area response
PL Permit Limit
RL Reporting Detection Limit

Revision v1



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Analytical Report

(consolidated)

WO#: 23110097

Date Reported: 11/9/2023

CLIENT: WSP Global Inc
Project: City of Piqua (Revised)
Lab ID: 23110097-005
Client Sample ID: GMRU-110123

Collection Date: 11/1/2023 9:25:00 AM

Matrix: NON-POTABLE WATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
METALS (200.8)				E200.8	E200.8	Analyst: RJE
Beryllium(Be)	ND	0.00100		mg/L	1	11/3/2023 1:37:50 PM
Cadmium(Cd)	ND	0.00100		mg/L	1	11/3/2023 1:37:50 PM
Copper(Cu)	ND	0.00100		mg/L	1	11/3/2023 1:37:50 PM
Lead(Pb)	ND	0.00100		mg/L	1	11/3/2023 1:37:50 PM
Selenium(Se)	ND	0.00100		mg/L	1	11/3/2023 1:37:50 PM
Thallium(Tl)	ND	0.00100		mg/L	1	11/3/2023 1:37:50 PM
ANIONS ANALYSIS BY IC (EPA 300.0)				E300.0		Analyst: TAL
Bromide	ND	0.100		mg/L	1	11/2/2023 12:32:00 PM
Chloride	41.7	5.00		mg/L	5	11/2/2023 2:44:00 PM
Fluoride	0.354	0.100	m	mg/L	1	11/2/2023 12:32:00 PM
Nitrate-N	0.862	0.0230		mg/L	1	11/2/2023 12:32:00 PM
Nitrite-N	ND	0.0330		mg/L	1	11/2/2023 12:32:00 PM
Orthophosphate-P	0.416	0.160		mg/L	1	11/2/2023 12:32:00 PM
Sulfate	48.9	5.00		mg/L	5	11/2/2023 2:44:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

Revision v1



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Analytical Report

(consolidated)

WO#: 23110097

Date Reported: 11/9/2023

CLIENT: WSP Global Inc
Project: City of Piqua (Revised)
Lab ID: 23110097-006
Client Sample ID: QPH-110123

Collection Date: 11/1/2023 9:38:00 AM

Matrix: NON-POTABLE WATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
CALCULATED ANALYTES						
					METALS-CALC E200.7	Analyst: RJE
Phosphate	ND	1.00			1	11/3/2023 11:01:00 AM
METALS (200.7)					E200.7	Analyst: RJE
Aluminum(Al)	ND	0.100		mg/L	1	11/3/2023 11:01:00 AM
Barium(Ba)	0.0275	0.0200		mg/L	1	11/3/2023 11:01:00 AM
Boron(B)	ND	0.100		mg/L	1	11/3/2023 11:01:00 AM
Calcium(Ca)	22.5	1.00		mg/L	1	11/3/2023 11:01:00 AM
Chromium(Cr)	ND	0.00800		mg/L	1	11/3/2023 11:01:00 AM
Cobalt(Co)	ND	0.0200		mg/L	1	11/3/2023 11:01:00 AM
Iron(Fe)	0.0464	0.0200		mg/L	1	11/3/2023 11:01:00 AM
Magnesium(Mg)	30.0	10.0		mg/L	20	11/6/2023 9:55:00 AM
Manganese(Mn)	ND	0.0200		mg/L	1	11/3/2023 11:01:00 AM
Molybdenum(Mo)	ND	0.0200		mg/L	1	11/3/2023 11:01:00 AM
Nickel(Ni)	ND	0.0200		mg/L	1	11/3/2023 11:01:00 AM
Phosphorus(P)	ND	0.500		mg/L	1	11/3/2023 11:01:00 AM
Potassium(K)	2.44	1.00		mg/L	1	11/3/2023 11:01:00 AM
Silicon(Si)	2.85	0.100		mg/L	1	11/3/2023 11:01:00 AM
Silver(Ag)	ND	0.00400		mg/L	1	11/3/2023 11:01:00 AM
Sodium(Na)	21.7	2.00		mg/L	1	11/3/2023 11:01:00 AM
Strontium(Sr)	0.266	0.100		mg/L	1	11/3/2023 11:01:00 AM
Tin(Sn)	ND	0.100		mg/L	1	11/3/2023 11:01:00 AM
Titanium(Ti)	ND	0.0200		mg/L	1	11/3/2023 11:01:00 AM
Vanadium(V)	ND	0.0500		mg/L	1	11/3/2023 11:01:00 AM
Zinc(Zn)	ND	0.0200		mg/L	1	11/3/2023 11:01:00 AM
UCMR5-LI METALS (200.7)					E200.7	Analyst: RJE
Lithium(Li)	ND	0.00840		mg/L	1	11/5/2023 9:34:00 AM
METALS (200.8)					E200.8	Analyst: RJE
Antimony(Sb)	ND	0.00100		mg/L	1	11/3/2023 1:42:59 PM
Arsenic(As)	ND	0.00100		mg/L	1	11/3/2023 1:42:59 PM

Qualifiers:
B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected
R RPD outside accepted recovery limits
W Sample container temperature is out of limit as specified at testcode

E Value above quantitation range
M Manual Integration used to determine area response
PL Permit Limit
RL Reporting Detection Limit

Revision v1



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Analytical Report

(consolidated)

WO#: 23110097

Date Reported: 11/9/2023

CLIENT: WSP Global Inc
Project: City of Piqua (Revised)
Lab ID: 23110097-006
Client Sample ID: QPH-110123

Collection Date: 11/1/2023 9:38:00 AM

Matrix: NON-POTABLE WATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
METALS (200.8)				E200.8	E200.8	Analyst: RJE
Beryllium(Be)	ND	0.00100		mg/L	1	11/3/2023 1:42:59 PM
Cadmium(Cd)	ND	0.00100		mg/L	1	11/3/2023 1:42:59 PM
Copper(Cu)	0.00699	0.00100		mg/L	1	11/3/2023 1:42:59 PM
Lead(Pb)	ND	0.00100		mg/L	1	11/3/2023 1:42:59 PM
Selenium(Se)	ND	0.00100		mg/L	1	11/3/2023 1:42:59 PM
Thallium(Tl)	ND	0.00100		mg/L	1	11/3/2023 1:42:59 PM
ANIONS ANALYSIS BY IC (EPA 300.0)				E300.0		Analyst: TAL
Bromide	ND	0.100		mg/L	1	11/2/2023 12:59:00 PM
Chloride	38.6	1.00		mg/L	1	11/2/2023 12:59:00 PM
Fluoride	0.156	0.100	m	mg/L	1	11/2/2023 12:59:00 PM
Nitrate-N	0.0838	0.0230		mg/L	1	11/2/2023 12:59:00 PM
Nitrite-N	ND	0.0330		mg/L	1	11/2/2023 12:59:00 PM
Orthophosphate-P	ND	0.160		mg/L	1	11/2/2023 12:59:00 PM
Sulfate	31.7	1.00		mg/L	1	11/2/2023 12:59:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	ND	Not Detected	PL	Permit Limit
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	W	Sample container temperature is out of limit as specified at testcode		

Revision v1



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Analytical Report

(consolidated)

WO#: 23110097

Date Reported: 11/9/2023

CLIENT: WSP Global Inc
Project: City of Piqua (Revised)
Lab ID: 23110097-007
Client Sample ID: RDPF-110123

Collection Date: 11/1/2023 8:14:00 AM

Matrix: WIPE

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
METALS ANALYSIS (6010)				SW6010	SW3050B	Analyst: RJE
Aluminum	ND	0.00500		mg/wipe	1	11/3/2023 11:48:00 AM
Antimony	ND	0.00500		mg/wipe	1	11/3/2023 11:48:00 AM
Arsenic	ND	0.00500		mg/wipe	1	11/3/2023 11:48:00 AM
Barium	ND	0.00500		mg/wipe	1	11/3/2023 11:48:00 AM
Beryllium	ND	0.00500		mg/wipe	1	11/3/2023 11:48:00 AM
Boron	ND	0.00500		mg/wipe	1	11/3/2023 11:48:00 AM
Cadmium	ND	0.00500		mg/wipe	1	11/3/2023 11:48:00 AM
Calcium	0.0588	0.00500	B	mg/wipe	1	11/3/2023 11:48:00 AM
Chromium	ND	0.00500		mg/wipe	1	11/3/2023 11:48:00 AM
Cobalt	ND	0.00500		mg/wipe	1	11/3/2023 11:48:00 AM
Copper	ND	0.00500		mg/wipe	1	11/3/2023 11:48:00 AM
Iron	ND	0.00500		mg/wipe	1	11/3/2023 11:48:00 AM
Lead	ND	0.00500		mg/wipe	1	11/3/2023 11:48:00 AM
Lithium	ND	0.00500		mg/wipe	1	11/3/2023 11:48:00 AM
Magnesium	0.0314	0.00500		mg/wipe	1	11/3/2023 11:48:00 AM
Manganese	ND	0.00500		mg/wipe	1	11/3/2023 11:48:00 AM
Molybdenum	ND	0.00500		mg/wipe	1	11/3/2023 11:48:00 AM
Nickel	ND	0.00500		mg/wipe	1	11/3/2023 11:48:00 AM
Phosphorus	ND	0.0500		mg/wipe	1	11/3/2023 11:48:00 AM
Potassium	ND	0.100		mg/wipe	1	11/3/2023 11:48:00 AM
Selenium	ND	0.00500		mg/wipe	1	11/3/2023 11:48:00 AM
Silicon	ND	0.200		mg/wipe	1	11/3/2023 11:48:00 AM
Silver	ND	0.00500		mg/wipe	1	11/3/2023 11:48:00 AM
Sodium	ND	1.00		mg/wipe	1	11/3/2023 11:48:00 AM
Strontium	ND	0.00500		mg/wipe	1	11/3/2023 11:48:00 AM
Thallium	ND	0.00500		mg/wipe	1	11/3/2023 11:48:00 AM
Tin	ND	0.00500		mg/wipe	1	11/3/2023 11:48:00 AM
Titanium	ND	0.0500		mg/wipe	1	11/3/2023 11:48:00 AM
Vanadium	ND	0.00500		mg/wipe	1	11/3/2023 11:48:00 AM
Zinc	ND	0.00500		mg/wipe	1	11/3/2023 11:48:00 AM

Qualifiers:
B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected
R RPD outside accepted recovery limits
W Sample container temperature is out of limit as specified at testcode

E Value above quantitation range
M Manual Integration used to determine area response
PL Permit Limit
RL Reporting Detection Limit

Revision v1



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Analytical Report

(consolidated)

WO#: 23110097

Date Reported: 11/9/2023

CLIENT: WSP Global Inc
Project: City of Piqua (Revised)
Lab ID: 23110097-008
Client Sample ID: RDPS-110123

Collection Date: 11/1/2023 8:19:00 AM

Matrix: WIPE

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
METALS ANALYSIS (6010)				SW6010	SW3050B	Analyst: RJE
Aluminum	ND	0.00500		mg/wipe	1	11/3/2023 11:52:00 AM
Antimony	ND	0.00500		mg/wipe	1	11/3/2023 11:52:00 AM
Arsenic	ND	0.00500		mg/wipe	1	11/3/2023 11:52:00 AM
Barium	ND	0.00500		mg/wipe	1	11/3/2023 11:52:00 AM
Beryllium	ND	0.00500		mg/wipe	1	11/3/2023 11:52:00 AM
Boron	ND	0.00500		mg/wipe	1	11/3/2023 11:52:00 AM
Cadmium	ND	0.00500		mg/wipe	1	11/3/2023 11:52:00 AM
Calcium	0.0791	0.00500	B	mg/wipe	1	11/3/2023 11:52:00 AM
Chromium	ND	0.00500		mg/wipe	1	11/3/2023 11:52:00 AM
Cobalt	ND	0.00500		mg/wipe	1	11/3/2023 11:52:00 AM
Copper	ND	0.00500		mg/wipe	1	11/3/2023 11:52:00 AM
Iron	ND	0.00500		mg/wipe	1	11/3/2023 11:52:00 AM
Lead	ND	0.00500		mg/wipe	1	11/3/2023 11:52:00 AM
Lithium	ND	0.00500		mg/wipe	1	11/3/2023 11:52:00 AM
Magnesium	0.0392	0.00500		mg/wipe	1	11/3/2023 11:52:00 AM
Manganese	ND	0.00500		mg/wipe	1	11/3/2023 11:52:00 AM
Molybdenum	ND	0.00500		mg/wipe	1	11/3/2023 11:52:00 AM
Nickel	ND	0.00500		mg/wipe	1	11/3/2023 11:52:00 AM
Phosphorus	ND	0.0500		mg/wipe	1	11/3/2023 11:52:00 AM
Potassium	ND	0.100		mg/wipe	1	11/3/2023 11:52:00 AM
Selenium	ND	0.00500		mg/wipe	1	11/3/2023 11:52:00 AM
Silicon	ND	0.200		mg/wipe	1	11/3/2023 11:52:00 AM
Silver	ND	0.00500		mg/wipe	1	11/3/2023 11:52:00 AM
Sodium	ND	1.00		mg/wipe	1	11/3/2023 11:52:00 AM
Strontium	ND	0.00500		mg/wipe	1	11/3/2023 11:52:00 AM
Thallium	ND	0.00500		mg/wipe	1	11/3/2023 11:52:00 AM
Tin	ND	0.00500		mg/wipe	1	11/3/2023 11:52:00 AM
Titanium	ND	0.0500		mg/wipe	1	11/3/2023 11:52:00 AM
Vanadium	ND	0.00500		mg/wipe	1	11/3/2023 11:52:00 AM
Zinc	0.0201	0.00500		mg/wipe	1	11/3/2023 11:52:00 AM

Qualifiers:
B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected
R RPD outside accepted recovery limits
W Sample container temperature is out of limit as specified at testcode

E Value above quantitation range
M Manual Integration used to determine area response
PL Permit Limit
RL Reporting Detection Limit

Revision v1



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Analytical Report

(consolidated)

WO#: 23110097

Date Reported: 11/9/2023

CLIENT: WSP Global Inc
Project: City of Piqua (Revised)
Lab ID: 23110097-009
Client Sample ID: RDPFB-110123

Collection Date: 11/1/2023 8:23:00 AM

Matrix: WIPE

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
METALS ANALYSIS (6010)				SW6010	SW3050B	Analyst: RJE
Aluminum	ND	0.00500		mg/wipe	1	11/3/2023 11:55:00 AM
Antimony	ND	0.00500		mg/wipe	1	11/3/2023 11:55:00 AM
Arsenic	ND	0.00500		mg/wipe	1	11/3/2023 11:55:00 AM
Barium	ND	0.00500		mg/wipe	1	11/3/2023 11:55:00 AM
Beryllium	ND	0.00500		mg/wipe	1	11/3/2023 11:55:00 AM
Boron	ND	0.00500		mg/wipe	1	11/3/2023 11:55:00 AM
Cadmium	ND	0.00500		mg/wipe	1	11/3/2023 11:55:00 AM
Calcium	0.0305	0.00500	B	mg/wipe	1	11/3/2023 11:55:00 AM
Chromium	ND	0.00500		mg/wipe	1	11/3/2023 11:55:00 AM
Cobalt	ND	0.00500		mg/wipe	1	11/3/2023 11:55:00 AM
Copper	ND	0.00500		mg/wipe	1	11/3/2023 11:55:00 AM
Iron	ND	0.00500		mg/wipe	1	11/3/2023 11:55:00 AM
Lead	ND	0.00500		mg/wipe	1	11/3/2023 11:55:00 AM
Lithium	ND	0.00500		mg/wipe	1	11/3/2023 11:55:00 AM
Magnesium	0.0312	0.00500		mg/wipe	1	11/3/2023 11:55:00 AM
Manganese	ND	0.00500		mg/wipe	1	11/3/2023 11:55:00 AM
Molybdenum	ND	0.00500		mg/wipe	1	11/3/2023 11:55:00 AM
Nickel	ND	0.00500		mg/wipe	1	11/3/2023 11:55:00 AM
Phosphorus	ND	0.0500		mg/wipe	1	11/3/2023 11:55:00 AM
Potassium	ND	0.100		mg/wipe	1	11/3/2023 11:55:00 AM
Selenium	ND	0.00500		mg/wipe	1	11/3/2023 11:55:00 AM
Silicon	ND	0.100		mg/wipe	1	11/3/2023 11:55:00 AM
Silver	ND	0.00500		mg/wipe	1	11/3/2023 11:55:00 AM
Sodium	ND	1.00		mg/wipe	1	11/3/2023 11:55:00 AM
Strontium	ND	0.00500		mg/wipe	1	11/3/2023 11:55:00 AM
Thallium	ND	0.00500		mg/wipe	1	11/3/2023 11:55:00 AM
Tin	ND	0.00500		mg/wipe	1	11/3/2023 11:55:00 AM
Titanium	ND	0.0500		mg/wipe	1	11/3/2023 11:55:00 AM
Vanadium	ND	0.00500		mg/wipe	1	11/3/2023 11:55:00 AM
Zinc	ND	0.00500		mg/wipe	1	11/3/2023 11:55:00 AM

Qualifiers:
B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected
R RPD outside accepted recovery limits
W Sample container temperature is out of limit as specified at testcode

E Value above quantitation range
M Manual Integration used to determine area response
PL Permit Limit
RL Reporting Detection Limit

Revision v1



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QC SUMMARY REPORT

WO#: 23110097

09-Nov-23

Client: WSP Global Inc
Project: City of Piqua (Revised)

BatchID: 70113

Sample ID: MB-70113	SampType: MBLK	TestCode: Mtl-ICPMS_D	Units: mg/L	Prep Date: 11/2/2023	RunNo: 173973						
Client ID: PBW	Batch ID: 70113	TestNo: E200.8	E200.8	Analysis Date: 11/3/2023	SeqNo: 4698997						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony(Sb)	ND	0.00100									
Arsenic(As)	ND	0.00100									
Beryllium(Be)	ND	0.00100									
Cadmium(Cd)	ND	0.00100									
Copper(Cu)	ND	0.00100									
Lead(Pb)	ND	0.00100									
Selenium(Se)	ND	0.00100									
Thallium(Tl)	ND	0.00100									

Sample ID: LCS-70113	SampType: LCS	TestCode: Mtl-ICPMS_D	Units: mg/L	Prep Date: 11/2/2023	RunNo: 173973						
Client ID: LCSW	Batch ID: 70113	TestNo: E200.8	E200.8	Analysis Date: 11/3/2023	SeqNo: 4698999						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony(Sb)	0.0537	0.00100	0.0500	0	107	85	115				
Arsenic(As)	0.0522	0.00100	0.0500	0	104	85	115				
Beryllium(Be)	0.0521	0.00100	0.0500	0	104	85	115				
Cadmium(Cd)	0.0532	0.00100	0.0500	0	106	85	115				
Copper(Cu)	0.0514	0.00100	0.0500	0	103	85	115				
Lead(Pb)	0.0524	0.00100	0.0500	0	105	85	115				
Selenium(Se)	0.0530	0.00100	0.0500	0	106	85	115				
Thallium(Tl)	0.0516	0.00100	0.0500	0	103	85	115				

Qualifiers: B Analyte detected in the associated Method Blank E Value above quantitation range H Holding times for preparation or analy
J Analyte detected below quantitation limits M Manual Integration used to determine area response MC Value is below Minimum Compound
ND Not Detected OG1 P Second column confirmation exceeds
PL Permit Limit R RPD outside accepted recovery limits RL Reporting Detection Limit

Revision v1



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QC SUMMARY REPORT

WO#: 23110097

09-Nov-23

Client: WSP Global Inc
Project: City of Piqua (Revised)

BatchID: 70113

Sample ID: 23110097-001AMS	SampType: MS	TestCode: Mtl-ICPMS_D	Units: mg/L	Prep Date: 11/2/2023	RunNo: 173973						
Client ID: RDP-110123	Batch ID: 70113	TestNo: E200.8	E200.8	Analysis Date: 11/3/2023	SeqNo: 4699003						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony(Sb)	0.0307	0.00100	0.0250	0.000674	120	70	130				
Arsenic(As)	0.0283	0.00100	0.0250	0.000353	112	70	130				
Beryllium(Be)	0.0266	0.00100	0.0250	0	106	70	130				
Cadmium(Cd)	0.0275	0.00100	0.0250	0	110	70	130				
Copper(Cu)	1.56	0.00100	0.0250	1.55	36.3	70	130				S
Lead(Pb)	0.0302	0.00100	0.0250	0.00179	114	70	130				
Selenium(Se)	0.0297	0.00100	0.0250	0.00113	114	70	130				
Thallium(Tl)	0.0284	0.00100	0.0250	0	113	70	130				

Sample ID: 23110097-001AMSD	SampType: MSD	TestCode: Mti-ICPMS_D			Units: mg/L	Prep Date: 11/2/2023			RunNo: 173973		
Client ID: RDP-110123	Batch ID: 70113	TestNo: E200.8		E200.8	Analysis Date: 11/3/2023			SeqNo: 4699005			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony(Sb)	0.0289	0.00100	0.0250	0.000674	113	70	130	0.0307	6.21	20	
Arsenic(As)	0.0269	0.00100	0.0250	0.000353	106	70	130	0.0283	5.11	20	
Beryllium(Be)	0.0249	0.00100	0.0250	0	99.8	70	130	0.0266	6.48	20	
Cadmium(Cd)	0.0258	0.00100	0.0250	0	103	70	130	0.0275	6.41	20	
Copper(Cu)	1.56	0.00100	0.0250	1.55	32.6	70	130	1.56	0.0592	20	S
Lead(Pb)	0.0287	0.00100	0.0250	0.00179	108	70	130	0.0302	5.09	20	
Selenium(Se)	0.0277	0.00100	0.0250	0.00113	106	70	130	0.0297	6.97	20	
Thallium(Tl)	0.0269	0.00100	0.0250	0	107	70	130	0.0284	5.40	20	

Qualifiers: B Analyte detected in the associated Method Blank
J Analyte detected below quantitation limits
ND Not Detected
PL Permit Limit

E Value above quantitation range
M Manual Integration used to determine area response
OG1
R RPD outside accepted recovery limits

H Holding times for preparation or analy
MC Value is below Minimum Compound
P Second column confirmation exceeds
RL Reporting Detection Limit

Revision v1



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QC SUMMARY REPORT

WO#: 23110097

09-Nov-23

Client: WSP Global Inc
Project: City of Piqua (Revised)

BatchID: 70113

Sample ID: 23110097-002ADUP	SampType: DUP	TestCode: Mtl-ICPMS_D	Units: mg/L	Prep Date: 11/2/2023	RunNo: 173973						
Client ID: WTP-110123	Batch ID: 70113	TestNo: E200.8	E200.8	Analysis Date: 11/3/2023	SeqNo: 4699009						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony(Sb)	ND	0.00100						0	0	20	
Arsenic(As)	ND	0.00100						0	0	20	
Beryllium(Be)	ND	0.00100						0	0	20	
Cadmium(Cd)	ND	0.00100						0	0	20	
Copper(Cu)	0.00335	0.00100						0.00531	45.3	20	R
Lead(Pb)	ND	0.00100						0	0	20	
Selenium(Se)	ND	0.00100						0.00119	200	20	R
Thallium(Tl)	ND	0.00100						0	0	20	

Qualifiers: B Analyte detected in the associated Method Blank
J Analyte detected below quantitation limits
ND Not Detected
PL Permit Limit

E Value above quantitation range
M Manual Integration used to determine area response
OG1
R RPD outside accepted recovery limits

H Holding times for preparation or analy
MC Value is below Minimum Compound
P Second column confirmation exceeds
RL Reporting Detection Limit

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QC SUMMARY REPORT

WO#: 23110097
09-Nov-23

Client: WSP Global Inc
Project: City of Piqua (Revised)

BatchID: 70152

Sample ID: MB-70152	SampType: MBLK	TestCode: Mtl-ICP_Wipe	Units: mg/wipe	Prep Date: 11/2/2023	RunNo: 173913						
Client ID: PBW	Batch ID: 70152	TestNo: SW6010	SW3050B	Analysis Date: 11/3/2023	SeqNo: 4708843						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	0.00500									
Antimony	ND	0.00500									
Arsenic	ND	0.0100									
Barium	ND	0.00500									
Beryllium	ND	0.00500									
Boron	ND	0.00500									
Cadmium	ND	0.0100									
Calcium	0.0929	0.00500									B
Chromium	ND	0.0100									
Cobalt	ND	0.00500									
Copper	ND	0.00500									
Iron	0.0542	0.00500									
Lead	ND	0.0100									
Lithium	ND	0.00500									
Magnesium	0.0374	0.00500									
Manganese	ND	0.00500									
Molybdenum	ND	0.00500									
Nickel	ND	0.00500									
Phosphorus	ND	0.0500									
Potassium	ND	0.100									
Selenium	ND	0.00500									
Silicon	ND	0.100									
Silver	ND	0.00500									

Qualifiers: B Analyte detected in the associated Method Blank
J Analyte detected below quantitation limits
ND Not Detected
PL Permit Limit

E Value above quantitation range
M Manual Integration used to determine area response
OG1
R RPD outside accepted recovery limits

H Holding times for preparation or analy
MC Value is below Minimum Compound
P Second column confirmation exceeds
RL Reporting Detection Limit

Revision v1



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QC SUMMARY REPORT

WO#: 23110097

09-Nov-23

Client: WSP Global Inc
Project: City of Piqua (Revised)

BatchID: 70152

Sample ID: MB-70152	SampType: MBLK	TestCode: Mtl-ICP_Wipe	Units: mg/wipe	Prep Date: 11/2/2023	RunNo: 173913						
Client ID: PBW	Batch ID: 70152	TestNo: SW6010	SW3050B	Analysis Date: 11/3/2023	SeqNo: 4708843						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	1.00									
Strontium	ND	0.00500									
Thallium	ND	0.00500									
Tin	0.0254	0.00500									B
Titanium	ND	0.0500									
Vanadium	ND	0.00500									
Zinc	ND	0.00500									

Sample ID: LCS-70152	SampType: LCS	TestCode: Mtl-ICP_Wipe	Units: mg/wipe	Prep Date: 11/2/2023	RunNo: 173913						
Client ID: LCSW	Batch ID: 70152	TestNo: SW6010	SW3050B	Analysis Date: 11/3/2023	SeqNo: 4708844						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.894	0.00500	1.000	0	89.4	80	120				
Antimony	0.849	0.00500	1.000	0	84.9	80	120				
Arsenic	0.872	0.0100	1.000	0	87.2	80	120				
Barium	0.900	0.00500	1.000	0	90.0	80	120				
Beryllium	0.901	0.00500	1.000	0	90.1	80	120				E
Boron	0.793	0.00500	1.000	0	79.3	80	120				S
Cadmium	0.900	0.0100	1.000	0	90.0	80	120				
Calcium	1.04	0.00500	1.000	0	104	80	120				B
Chromium	0.964	0.0100	1.000	0	96.4	80	120				
Cobalt	0.916	0.00500	1.000	0	91.6	80	120				

Qualifiers: B Analyte detected in the associated Method Blank E Value above quantitation range H Holding times for preparation or analy
J Analyte detected below quantitation limits M Manual Integration used to determine area response MC Value is below Minimum Compound
ND Not Detected OG1 P Second column confirmation exceeds
PL Permit Limit R RPD outside accepted recovery limits RL Reporting Detection Limit

Revision v1



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QC SUMMARY REPORT

WO#: 23110097

09-Nov-23

Client: WSP Global Inc
Project: City of Piqua (Revised)

BatchID: 70152

Sample ID: LCS-70152	SampType: LCS	TestCode: Mtl-ICP_Wipe	Units: mg/wipe	Prep Date: 11/2/2023	RunNo: 173913						
Client ID: LCSW	Batch ID: 70152	TestNo: SW6010	SW3050B	Analysis Date: 11/3/2023	SeqNo: 4708844						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.922	0.00500	1.000	0	92.2	80	120				
Iron	1.03	0.00500	1.000	0	103	80	120				
Lead	0.933	0.0100	1.000	0	93.3	80	120				
Lithium	0.791	0.00500	1.000	0	79.1	80	120				S
Magnesium	0.988	0.00500	1.000	0	98.8	80	120				
Manganese	0.918	0.00500	1.000	0	91.8	80	120				
Molybdenum	0.958	0.00500	1.000	0	95.8	80	120				
Nickel	0.963	0.00500	1.000	0	96.3	80	120				
Phosphorus	0.863	0.0500	1.000	0	86.3	80	120				
Potassium	0.918	0.100	1.000	0	91.8	80	120				
Selenium	0.782	0.00500	1.000	0	78.2	80	120				S
Silicon	0.535	0.100	0.4670	0	115	80	120				B
Silver	0.946	0.00500	1.000	0	94.6	80	120				
Sodium	1.11	1.00	1.000	0	111	80	120				
Strontium	0.953	0.00500	1.000	0	95.3	80	120				
Thallium	0.885	0.00500	1.000	0	88.5	80	120				
Tin	1.02	0.00500	1.000	0	102	80	120				B
Titanium	0.935	0.0500	1.000	0	93.5	80	120				
Vanadium	0.938	0.00500	1.000	0	93.8	80	120				
Zinc	0.902	0.00500	1.000	0	90.2	80	120				

Qualifiers: B Analyte detected in the associated Method Blank
J Analyte detected below quantitation limits
ND Not Detected
PL Permit Limit

E Value above quantitation range
M Manual Integration used to determine area response
OG1
R RPD outside accepted recovery limits

H Holding times for preparation or analy
MC Value is below Minimum Compound
P Second column confirmation exceeds
RL Reporting Detection Limit

Revision v1



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QC SUMMARY REPORT

WO#: 23110097

09-Nov-23

Client: WSP Global Inc
Project: City of Piqua (Revised)

BatchID: 70152

Sample ID: LCSD-70152	SampType: LCSD	TestCode: Mtl-ICP_Wipe	Units: mg/wipe	Prep Date: 11/2/2023	RunNo: 173913						
Client ID: LCSS02	Batch ID: 70152	TestNo: SW6010	SW3050B	Analysis Date: 11/3/2023	SeqNo: 4708845						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.880	0.00500	1.000	0	88.0	80	120	0.8940	1.56	20	
Antimony	0.843	0.00500	1.000	0	84.3	80	120	0.8492	0.733	20	
Arsenic	0.862	0.0100	1.000	0	86.2	80	120	0.8719	1.14	20	
Barium	0.896	0.00500	1.000	0	89.6	80	120	0.9003	0.529	20	
Beryllium	0.896	0.00500	1.000	0	89.6	80	120	0.9008	0.540	20	
Boron	0.784	0.00500	1.000	0	78.4	80	120	0.7929	1.12	20	S
Cadmium	0.891	0.0100	1.000	0	89.1	80	120	0.9003	1.09	20	
Calcium	1.06	0.00500	1.000	0	106	80	120	1.039	1.97	20	B
Chromium	0.952	0.0100	1.000	0	95.2	80	120	0.9642	1.29	20	
Cobalt	0.914	0.00500	1.000	0	91.4	80	120	0.9162	0.208	20	
Copper	0.914	0.00500	1.000	0	91.4	80	120	0.9216	0.866	20	
Iron	1.07	0.00500	1.000	0	107	80	120	1.031	3.49	20	
Lead	0.921	0.0100	1.000	0	92.1	80	120	0.9326	1.26	20	
Lithium	0.781	0.00500	1.000	0	78.1	80	120	0.7914	1.29	0	S
Magnesium	0.984	0.00500	1.000	0	98.4	80	120	0.9880	0.355	20	
Manganese	0.908	0.00500	1.000	0	90.8	80	120	0.9180	1.10	20	
Molybdenum	0.956	0.00500	1.000	0	95.6	80	120	0.9580	0.199	20	
Nickel	0.953	0.00500	1.000	0	95.3	80	120	0.9632	1.11	20	
Phosphorus	0.858	0.0500	1.000	0	85.8	80	120	0.8632	0.587	20	
Potassium	0.915		1.000	0	91.5	80	120	0.9180	0.349	20	
Selenium	0.778	0.00500	1.000	0	77.8	80	120	0.7818	0.532	20	S
Silicon	0.535	0.100	0.4670	0	115	80	120	0.5350	0	20	B
Silver	0.935	0.00500	1.000	0	93.5	80	120	0.9456	1.15	20	

Qualifiers: B Analyte detected in the associated Method Blank
J Analyte detected below quantitation limits
ND Not Detected
PL Permit Limit

E Value above quantitation range
M Manual Integration used to determine area response
OG1
R RPD outside accepted recovery limits

H Holding times for preparation or analy
MC Value is below Minimum Compound
P Second column confirmation exceeds
RL Reporting Detection Limit

Revision v1



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QC SUMMARY REPORT

WO#: 23110097

09-Nov-23

Client: WSP Global Inc
Project: City of Piqua (Revised)

BatchID: 70152

Sample ID: LCSD-70152	SampType: LCSD	TestCode: Mtl-ICP_Wipe	Units: mg/wipe	Prep Date: 11/2/2023	RunNo: 173913						
Client ID: LCSS02	Batch ID: 70152	TestNo: SW6010	SW3050B	Analysis Date: 11/3/2023	SeqNo: 4708845						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1.11	1.00	1.000	0	111	80	120	1.107	0.271	20	B
Strontium	0.942	0.00500	1.000	0	94.2	80	120	0.9529	1.12	20	
Thallium	0.874	0.00500	1.000	0	87.4	80	120	0.8848	1.18	20	
Tin	0.977	0.00500	1.000	0	97.7	80	120	1.025	4.77	20	
Titanium	0.936	0.0500	1.000	0	93.6	80	120	0.9348	0.0909	20	
Vanadium	0.930	0.00500	1.000	0	93.0	80	120	0.9383	0.856	20	
Zinc	0.892	0.00500	1.000	0	89.2	80	120	0.9024	1.11	20	

Qualifiers: B Analyte detected in the associated Method Blank
J Analyte detected below quantitation limits
ND Not Detected
PL Permit Limit

E Value above quantitation range
M Manual Integration used to determine area response
OG1
R RPD outside accepted recovery limits

H Holding times for preparation or analy
MC Value is below Minimum Compound
P Second column confirmation exceeds
RL Reporting Detection Limit

Revision v1



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QC SUMMARY REPORT

WO#: 23110097
09-Nov-23

Client: WSP Global Inc
Project: City of Piqua (Revised)

BatchID: 70153

Sample ID: MB-70153	SampType: MBLK	TestCode: Mtl-ICP_DW(			Units: mg/L	Prep Date: 11/2/2023			RunNo: 173913		
Client ID: PBW	Batch ID: 70153	TestNo: E200.7		E200.7		Analysis Date: 11/3/2023			SeqNo: 4696882		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum(Al)	ND	0.100									
Barium(Ba)	ND	0.0200									
Boron(B)	ND	0.100									
Calcium(Ca)	ND	1.00									
Chromium(Cr)	ND	0.00800									
Cobalt(Co)	ND	0.0200									
Iron(Fe)	ND	0.0200									
Magnesium(Mg)	ND	0.500									
Manganese(Mn)	ND	0.0200									
Molybdenum(Mo)	ND	0.0200									
Nickel(Ni)	ND	0.0200									
Phosphorus(P)	ND	0.500									
Potassium(K)	ND	1.00									
Silicon(Si)	ND	0.100									
Silver(Ag)	ND	0.00400									
Sodium(Na)	ND	2.00									
Strontium(Sr)	ND	0.100									
Tin(Sn)	ND	0.100									
Titanium(Ti)	ND	0.0200									
Zinc(Zn)	ND	0.0200									

Qualifiers: B Analyte detected in the associated Method Blank
J Analyte detected below quantitation limits
ND Not Detected
PL Permit Limit

E Value above quantitation range
M Manual Integration used to determine area response
OG1
R RPD outside accepted recovery limits

H Holding times for preparation or analy
MC Value is below Minimum Compound
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QC SUMMARY REPORT

WO#: 23110097

09-Nov-23

Client: WSP Global Inc
Project: City of Piqua (Revised)

BatchID: 70153

Sample ID: LCS-70153	SampType: LCS	TestCode: Mtl-ICP_DW(		Units: mg/L	Prep Date: 11/2/2023			RunNo: 173913			
Client ID: LCSW	Batch ID: 70153	TestNo: E200.7		E200.7	Analysis Date: 11/3/2023			SeqNo: 4696883			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum(Al)	4.36	0.100	5.000	0	87.2	85	115				
Barium(Ba)	0.174	0.0200	0.2000	0	87.0	85	115				
Boron(B)	0.342	0.100	0.4000	0	85.6	85	115				
Calcium(Ca)	4.33	1.00	5.000	0	86.7	85	115				
Chromium(Cr)	0.144	0.00800	0.1600	0	89.8	85	115				
Cobalt(Co)	0.355	0.0200	0.4000	0	88.7	85	115				
Iron(Fe)	0.377	0.0200	0.4000	0	94.3	85	115				
Magnesium(Mg)	0.729	0.500	0.8000	0	91.1	85	115				
Manganese(Mn)	0.0390	0.0200	0.04000	0	97.5	85	115				
Molybdenum(Mo)	0.144	0.0200	0.1600	0	89.7	85	115				
Nickel(Ni)	0.0752	0.0200	0.08000	0	94.0	85	115				
Phosphorus(P)	4.44	0.500	5.000	0	88.8	85	115				
Potassium(K)	8.76	1.00	10.00	0	87.6	85	115				
Silicon(Si)	4.26	0.100	4.670	0	91.1	85	115				
Silver(Ag)	0.0354	0.00400	0.04000	0	88.4	85	115				
Sodium(Na)	8.89	2.00	10.00	0	88.9	85	115				
Strontium(Sr)	0.925	0.100	1.000	0	92.5	85	115				
Tin(Sn)	0.0840		0.08000	0	105	85	115				
Titanium(Ti)	0.878	0.0200	1.000	0	87.8	85	115				
Zinc(Zn)	0.185	0.0200	0.2000	0	92.7	85	115				

Qualifiers: B Analyte detected in the associated Method Blank
J Analyte detected below quantitation limits
ND Not Detected
PL Permit Limit

E Value above quantitation range
M Manual Integration used to determine area response
OG1
R RPD outside accepted recovery limits

H Holding times for preparation or analy
MC Value is below Minimum Compound
P Second column confirmation exceeds
RL Reporting Detection Limit

Revision v1



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QC SUMMARY REPORT

WO#: 23110097

09-Nov-23

Client: WSP Global Inc
Project: City of Piqua (Revised)

BatchID: 70153

Sample ID: 23110149-001AMS	SampType: MS	TestCode: Mtl-ICP_DW(	Units: mg/L	Prep Date: 11/2/2023	RunNo: 173913						
Client ID: BatchQC	Batch ID: 70153	TestNo: E200.7	E200.7	Analysis Date: 11/3/2023	SeqNo: 4696897						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum(Al)	4.53	0.100	5.000	0	90.6	70	130				
Barium(Ba)	0.317	0.0200	0.2000	0.1433	87.0	70	130				
Boron(B)	0.375	0.100	0.4000	0.02220	88.1	70	130				
Chromium(Cr)	0.143	0.00800	0.1600	0	89.1	70	130				
Cobalt(Co)	0.338	0.0200	0.4000	0	84.4	70	130				
Iron(Fe)	0.823	0.0200	0.4000	0.4655	89.5	70	130				
Magnesium(Mg)	33.8	0.500	0.8000	34.06	-30.7	70	130				ES
Manganese(Mn)	1.30	0.0200	0.04000	1.304	-12.5	70	130				S
Molybdenum(Mo)	0.147	0.0200	0.1600	0	91.8	70	130				
Nickel(Ni)	0.0698	0.0200	0.08000	0	87.2	70	130				
Phosphorus(P)	4.66	0.500	5.000	0	93.2	70	130				
Potassium(K)	21.2	1.00	10.00	12.52	86.9	70	130				
Silicon(Si)	21.5	0.100	4.670	0	460	70	130				S
Silver(Ag)	0.0368	0.00400	0.04000	0	92.0	70	130				
Sodium(Na)	28.7	2.00	10.00	20.36	83.1	70	130				
Strontium(Sr)	1.34	0.100	1.000	0.4514	88.9	70	130				
Tin(Sn)	0.0785		0.08000	0	98.1	70	130				
Titanium(Ti)	0.891	0.0200	1.000	0	89.1	70	130				
Zinc(Zn)	1.12	0.0200	0.2000	0.9569	83.1	70	130				

Qualifiers: B Analyte detected in the associated Method Blank
J Analyte detected below quantitation limits
ND Not Detected
PL Permit Limit

E Value above quantitation range
M Manual Integration used to determine area response
OG1
R RPD outside accepted recovery limits

H Holding times for preparation or analy
MC Value is below Minimum Compound
P Second column confirmation exceeds
RL Reporting Detection Limit

Revision v1



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QC SUMMARY REPORT

WO#: 23110097

09-Nov-23

Client: WSP Global Inc
Project: City of Piqua (Revised)

BatchID: 70153

Sample ID: 23110149-001AMSD	SampType: MSD	TestCode: Mtl-ICP_DW(	Units: mg/L	Prep Date: 11/2/2023	RunNo: 173913						
Client ID: BatchQC	Batch ID: 70153	TestNo: E200.7	E200.7	Analysis Date: 11/3/2023	SeqNo: 4696898						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum(Al)	4.50	0.100	5.000	0	90.0	70	130	4.529	0.656	20	
Barium(Ba)	0.316	0.0200	0.2000	0.1433	86.6	70	130	0.3172	0.253	20	
Boron(B)	0.374	0.100	0.4000	0.02220	87.9	70	130	0.3746	0.214	20	
Chromium(Cr)	0.142	0.00800	0.1600	0	88.7	70	130	0.1426	0.492	20	
Cobalt(Co)	0.340	0.0200	0.4000	0	85.1	70	130	0.3377	0.826	20	
Iron(Fe)	0.826	0.0200	0.4000	0.4655	90.2	70	130	0.8234	0.376	20	
Magnesium(Mg)	34.2	0.500	0.8000	34.06	11.3	70	130	33.82	0.988	20	ES
Manganese(Mn)	1.32	0.0200	0.04000	1.304	27.5	70	130	1.299	1.22	20	S
Molybdenum(Mo)	0.149	0.0200	0.1600	0	93.1	70	130	0.1469	1.42	20	
Nickel(Ni)	0.0687	0.0200	0.08000	0	85.9	70	130	0.06980	1.59	20	
Phosphorus(P)	4.72	0.500	5.000	0	94.3	70	130	4.658	1.23	20	
Potassium(K)	21.2	1.00	10.00	12.52	87.2	70	130	21.21	0.117	20	
Silicon(Si)	22.3	0.100	4.670	0	478	70	130	21.50	3.77	20	S
Silver(Ag)	0.0362	0.00400	0.04000	0	90.5	70	130	0.03678	1.62	20	
Sodium(Na)	28.8	2.00	10.00	20.36	84.4	70	130	28.67	0.437	20	
Strontium(Sr)	1.34	0.100	1.000	0.4514	88.8	70	130	1.340	0.0970	20	
Tin(Sn)	0.0731		0.08000	0	91.4	70	130	0.07850	7.12	20	
Titanium(Ti)	0.902	0.0200	1.000	0	90.2	70	130	0.8914	1.18	20	
Zinc(Zn)	1.13	0.0200	0.2000	0.9569	86.7	70	130	1.123	0.639	20	

Qualifiers: B Analyte detected in the associated Method Blank
J Analyte detected below quantitation limits
ND Not Detected
PL Permit Limit

E Value above quantitation range
M Manual Integration used to determine area response
OG1
R RPD outside accepted recovery limits

H Holding times for preparation or analy
MC Value is below Minimum Compound
P Second column confirmation exceeds
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QC SUMMARY REPORT

WO#: 23110097
09-Nov-23

Client: WSP Global Inc
Project: City of Piqua (Revised)

BatchID: 70154

Sample ID: 23101651-010ADUP	SampType: DUP	TestCode: Mtl-ICP-UCM	Units: mg/L	Prep Date: 11/2/2023	RunNo: 174015						
Client ID: BatchQC	Batch ID: 70154	TestNo: E200.7	E200.7	Analysis Date: 11/5/2023	SeqNo: 4701659						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lithium(Li)	ND	0.00500						0	0	20	

Sample ID: 23101651-010AMS	SampType: MS	TestCode: Mtl-ICP-UCM	Units: mg/L	Prep Date: 11/2/2023	RunNo: 174015						
Client ID: BatchQC	Batch ID: 70154	TestNo: E200.7	E200.7	Analysis Date: 11/5/2023	SeqNo: 4701660						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lithium(Li)	0.00520	0.00500	0.005000	0	104						

Sample ID: 23101651-010AMSD	SampType: MSD	TestCode: Mtl-ICP-UCM	Units: mg/L	Prep Date: 11/2/2023	RunNo: 174015						
Client ID: BatchQC	Batch ID: 70154	TestNo: E200.7	E200.7	Analysis Date: 11/5/2023	SeqNo: 4701661						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lithium(Li)	0.00570		0.005000	0	114			0.005200	9.17	20	

Sample ID: 23102004-005ADUP	SampType: DUP	TestCode: Mtl-ICP-UCM	Units: mg/L	Prep Date: 11/2/2023	RunNo: 174015						
Client ID: BatchQC	Batch ID: 70154	TestNo: E200.7	E200.7	Analysis Date: 11/5/2023	SeqNo: 4701663						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lithium(Li)	ND	0.00500						0	0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analy
J	Analyte detected below quantitation limits	M	Manual Integration used to determine area response	MC	Value is below Minimum Compound
ND	Not Detected	OG1		P	Second column confirmation exceeds
PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Revision v1



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QC SUMMARY REPORT

WO#: 23110097

09-Nov-23

Client: WSP Global Inc
Project: City of Piqua (Revised)

BatchID: 70154

Sample ID: 23102004-005ADUP	SampType: DUP	TestCode: Mtl-ICP-UCM	Units: mg/L	Prep Date: 11/2/2023	RunNo: 174015						
Client ID: BatchQC	Batch ID: 70154	TestNo: E200.7	E200.7	Analysis Date: 11/5/2023	SeqNo: 4701663						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

NOTES:

MS/MSD RPD: Values < PQL

Sample ID: 23102004-005AMS	SampType: MS	TestCode: Mtl-ICP-UCM	Units: mg/L	Prep Date: 11/2/2023	RunNo: 174015						
Client ID: BatchQC	Batch ID: 70154	TestNo: E200.7	E200.7	Analysis Date: 11/5/2023	SeqNo: 4701664						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lithium(Li)	0.00330		0.005000	0	66.0						

Sample ID: 23102004-005AMSD	SampType: MSD	TestCode: Mtl-ICP-UCM	Units: mg/L	Prep Date: 11/2/2023	RunNo: 174015						
Client ID: BatchQC	Batch ID: 70154	TestNo: E200.7	E200.7	Analysis Date: 11/5/2023	SeqNo: 4701666						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lithium(Li)	0.00410		0.005000	0	82.0			0.003300	21.6	20	R

Sample ID: 23101651-005ADUP	SampType: DUP	TestCode: Mtl-ICP-UCM	Units: mg/L	Prep Date: 11/2/2023	RunNo: 174015						
Client ID: BatchQC	Batch ID: 70154	TestNo: E200.7	E200.7	Analysis Date: 11/5/2023	SeqNo: 4701695						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lithium(Li)	ND	0.00500						0	0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analy
J	Analyte detected below quantitation limits	M	Manual Integration used to determine area response	MC	Value is below Minimum Compound
ND	Not Detected	OG1		P	Second column confirmation exceeds
PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

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QC SUMMARY REPORT

WO#: 23110097

09-Nov-23

Client: WSP Global Inc
Project: City of Piqua (Revised)

BatchID: 70154

Sample ID: 23101651-005ADUP		SampType: DUP		TestCode: Mtl-ICP-UCM		Units: mg/L		Prep Date: 11/2/2023			RunNo: 174015		
Client ID: BatchQC		Batch ID: 70154		TestNo: E200.7		E200.7		Analysis Date: 11/5/2023			SeqNo: 4701695		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: 23101651-005AMS	SampType: MS	TestCode: Mtl-ICP-UCM	Units: mg/L	Prep Date: 11/2/2023	RunNo: 174015						
Client ID: BatchQC	Batch ID: 70154	TestNo: E200.7	E200.7	Analysis Date: 11/5/2023	SeqNo: 4701696						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lithium(Li)	0.00480		0.005000	0	96.0						

Sample ID: 23101651-005AMSD	SampType: MSD	TestCode: Mtl-ICP-UCM	Units: mg/L	Prep Date: 11/2/2023	RunNo: 174015						
Client ID: BatchQC	Batch ID: 70154	TestNo: E200.7	E200.7	Analysis Date: 11/5/2023	SeqNo: 4701697						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lithium(Li)	0.00530		0.005000	0	106			0.004800	9.90	20	

Qualifiers: B Analyte detected in the associated Method Blank
J Analyte detected below quantitation limits
ND Not Detected
PL Permit Limit

E Value above quantitation range
M Manual Integration used to determine area response
OG1
R RPD outside accepted recovery limits

H Holding times for preparation or analy
MC Value is below Minimum Compound
P Second column confirmation exceeds
RL Reporting Detection Limit

Revision v1



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QC SUMMARY REPORT

WO#: 23110097

09-Nov-23

Client: WSP Global Inc
Project: City of Piqua (Revised)

BatchID: 70158

Sample ID: 23110097-003AMS	SampType: MS	TestCode: Mtl-ICPMS_D		Units: mg/L	Prep Date: 11/3/2023			RunNo: 173973			
Client ID: SRL-110123	Batch ID: 70158	TestNo: E200.8		E200.8	Analysis Date: 11/3/2023			SeqNo: 4698962			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony(Sb)	0.0279	0.00100	0.0250	0.000676	109	70	130				
Arsenic(As)	0.0307	0.00100	0.0250	0.00429	105	70	130				
Beryllium(Be)	0.0258	0.00100	0.0250	0	103	70	130				
Cadmium(Cd)	0.0267	0.00100	0.0250	0	107	70	130				
Copper(Cu)	0.0251	0.00100	0.0250	0.00177	93.4	70	130				
Lead(Pb)	0.0279	0.00100	0.0250	0.000584	109	70	130				
Selenium(Se)	0.0276	0.00100	0.0250	0.000699	108	70	130				
Thallium(Tl)	0.0273	0.00100	0.0250	0	109	70	130				

Sample ID: 23110097-003AMSD	SampType: MSD	TestCode: Mtl-ICPMS_D	Units: mg/L	Prep Date: 11/3/2023	RunNo: 173973						
Client ID: SRL-110123	Batch ID: 70158	TestNo: E200.8	E200.8	Analysis Date: 11/3/2023	SeqNo: 4698966						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony(Sb)	0.0278	0.00100	0.0250	0.000676	109	70	130	0.0279	0.312	20	
Arsenic(As)	0.0299	0.00100	0.0250	0.00429	102	70	130	0.0307	2.46	20	
Beryllium(Be)	0.0254	0.00100	0.0250	0	102	70	130	0.0258	1.40	20	
Cadmium(Cd)	0.0261	0.00100	0.0250	0	104	70	130	0.0267	2.48	20	
Copper(Cu)	0.0245	0.00100	0.0250	0.00177	90.9	70	130	0.0251	2.54	20	
Lead(Pb)	0.0276	0.00100	0.0250	0.000584	108	70	130	0.0279	1.10	20	
Selenium(Se)	0.0265	0.00100	0.0250	0.000699	103	70	130	0.0276	4.08	20	
Thallium(Tl)	0.0271	0.00100	0.0250	0	108	70	130	0.0273	0.773	20	

Qualifiers:
B Analyte detected in the associated Method Blank
J Analyte detected below quantitation limits
ND Not Detected
PL Permit Limit

E Value above quantitation range
M Manual Integration used to determine area response
OG1
R RPD outside accepted recovery limits

H Holding times for preparation or analy
MC Value is below Minimum Compound
P Second column confirmation exceeds
RL Reporting Detection Limit

Revision v1



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QC SUMMARY REPORT

WO#: 23110097

09-Nov-23

Client: WSP Global Inc
Project: City of Piqua (Revised)

BatchID: 70158

Sample ID: 23110097-004ADUP		SampType: DUP	TestCode: Mtl-ICPMS_D			Units: mg/L		Prep Date: 11/3/2023		RunNo: 173973	
Client ID: GMR-110123		Batch ID: 70158	TestNo: E200.8		E200.8		Analysis Date: 11/3/2023		SeqNo: 4698968		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony(Sb)	ND	0.00100						0	0	20	R
Arsenic(As)	0.00165	0.00100						0.00163	1.16	20	
Beryllium(Be)	ND	0.00100						0	0	20	
Cadmium(Cd)	ND	0.00100						0	0	20	
Copper(Cu)	ND	0.00100						0	0	20	
Lead(Pb)	ND	0.00100						0	0	20	
Selenium(Se)	ND	0.00100						0	0	20	R
Thallium(Tl)	ND	0.00100						0	0	20	

Sample ID: MB-70158	SampType: MBLK	TestCode: Mtl-ICPMS_D	Units: mg/L	Prep Date: 11/3/2023	RunNo: 173973						
Client ID: PBW	Batch ID: 70158	TestNo: E200.8	E200.8	Analysis Date: 11/3/2023	SeqNo: 4699026						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony(Sb)	ND	0.00100									
Arsenic(As)	ND	0.00100									
Beryllium(Be)	ND	0.00100									
Cadmium(Cd)	ND	0.00100									
Copper(Cu)	ND	0.00100									
Lead(Pb)	ND	0.00100									
Selenium(Se)	ND	0.00100									
Thallium(Tl)	ND	0.00100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analy
J	Analyte detected below quantitation limits	M	Manual Integration used to determine area response	MC	Value is below Minimum Compound
ND	Not Detected	OG1		P	Second column confirmation exceeds
PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Revision v1



Summit Environmental Technologies, Inc.
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TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 23110097

09-Nov-23

Client: WSP Global Inc
Project: City of Piqua (Revised)

BatchID: 70158

Sample ID: LCS-70158	SampType: LCS	TestCode: Mtl-ICPMS_D	Units: mg/L	Prep Date: 11/3/2023	RunNo: 173973						
Client ID: LCSW	Batch ID: 70158	TestNo: E200.8	E200.8	Analysis Date: 11/3/2023	SeqNo: 4699027						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony(Sb)	0.0517	0.00100	0.0500	0	103	85	115				
Arsenic(As)	0.0503	0.00100	0.0500	0	101	85	115				
Beryllium(Be)	0.0506	0.00100	0.0500	0	101	85	115				
Cadmium(Cd)	0.0514	0.00100	0.0500	0	103	85	115				
Copper(Cu)	0.0500	0.00100	0.0500	0	100	85	115				
Lead(Pb)	0.0509	0.00100	0.0500	0	102	85	115				
Selenium(Se)	0.0518	0.00100	0.0500	0	104	85	115				
Thallium(Tl)	0.0501	0.00100	0.0500	0	100	85	115				

Qualifiers: B Analyte detected in the associated Method Blank
J Analyte detected below quantitation limits
ND Not Detected
PL Permit Limit

E Value above quantitation range
M Manual Integration used to determine area response
OG1
R RPD outside accepted recovery limits

H Holding times for preparation or analy
MC Value is below Minimum Compound
P Second column confirmation exceeds
RL Reporting Detection Limit

Revision v1



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QC SUMMARY REPORT

WO#: 23110097

09-Nov-23

Client: WSP Global Inc
Project: City of Piqua (Revised)

BatchID: R173888

Sample ID: MB	SampType: MBLK	TestCode: Anions_NPW	Units: mg/L	Prep Date:	RunNo: 173888						
Client ID: PBW	Batch ID: R173888	TestNo: E300.0		Analysis Date: 11/1/2023	SeqNo: 4696555						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.100		0	0						
Chloride	ND	1.00		0	0						m
Fluoride	ND	0.100		0	0						
Nitrate-N	ND	0.100		0	0						
Nitrite-N	ND	0.100		0	0						
Orthophosphate-P	ND	0.100		0	0						
Sulfate	ND	1.00		0	0						

Sample ID: RLC	SampType: RLC	TestCode: Anions_NPW	Units: mg/L	Prep Date:	RunNo: 173888						
Client ID: BatchQC	Batch ID: R173888	TestNo: E300.0		Analysis Date: 11/1/2023	SeqNo: 4696556						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.100	0.1000	0	78.9	50	150				
Chloride	ND	1.00	0.1000	0	118	50	150				
Fluoride	ND	0.100	0.1000	0	71.1	50	150				m
Nitrate-N	ND	0.100	0.02300	0	113	50	150				
Nitrite-N	ND	0.100	0.03300	0	74.5	50	150				
Orthophosphate-P	ND	0.100	0.03200	0	91.9	50	150				
Sulfate	ND	1.00	0.1000	0	82.9	50	150				

Qualifiers:
B Analyte detected in the associated Method Blank
J Analyte detected below quantitation limits
ND Not Detected
PL Permit Limit

E Value above quantitation range
M Manual Integration used to determine area response
OG1
R RPD outside accepted recovery limits

H Holding times for preparation or analy
MC Value is below Minimum Compound
P Second column confirmation exceeds
RL Reporting Detection Limit

Revision v1



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QC SUMMARY REPORT

WO#: 23110097

09-Nov-23

Client: WSP Global Inc
Project: City of Piqua (Revised)

BatchID: R173888

Sample ID: LCS	SampType: LCS	TestCode: Anions_NPW	Units: mg/L	Prep Date:	RunNo: 173888						
Client ID: LCSW	Batch ID: R173888	TestNo: E300.0		Analysis Date: 11/1/2023	SeqNo: 4696557						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	19.0	0.100	20.00	0	95.2	90	110				
Chloride	18.4	1.00	20.00	0	91.9	90	110				
Fluoride	20.0	0.100	20.00	0	100	90	110				
Nitrate-N	4.41	0.100	4.600	0	95.9	90	110				
Nitrite-N	6.41	0.100	6.600	0	97.0	90	110				
Orthophosphate-P	6.24	0.100	6.400	0	97.6	90	110				
Sulfate	19.2	1.00	20.00	0	95.8	90	110				

Sample ID: LCSD	SampType: LCSD	TestCode: Anions_NPW	Units: mg/L	Prep Date:				RunNo: 173888			
Client ID: LCSS02	Batch ID: R173888	TestNo: E300.0	Analysis Date: 11/1/2023				SeqNo: 4696558				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	19.1	0.100	20.00	0	95.3	90	110	19.04	0.173	20	
Chloride	18.4	1.00	20.00	0	91.8	90	110	18.37	0.00871	20	
Fluoride	20.1	0.100	20.00	0	100	90	110	20.04	0.304	20	
Nitrate-N	4.41	0.100	4.600	0	95.9	90	110	4.412	0.0295	20	
Nitrite-N	6.42	0.100	6.600	0	97.2	90	110	6.405	0.159	20	
Orthophosphate-P	6.28	0.100	6.400	0	98.1	90	110	6.245	0.498	20	
Sulfate	19.1	1.00	20.00	0	95.7	90	110	19.15	0.0972	20	

Qualifiers: B Analyte detected in the associated Method Blank
J Analyte detected below quantitation limits
ND Not Detected
PL Permit Limit

E Value above quantitation range
M Manual Integration used to determine area response
OG1
R RPD outside accepted recovery limits

H Holding times for preparation or analy
MC Value is below Minimum Compound
P Second column confirmation exceeds
RL Reporting Detection Limit

Revision v1



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QC SUMMARY REPORT

WO#: 23110097

09-Nov-23

Client: WSP Global Inc
Project: City of Piqua (Revised)

BatchID: R173888

Sample ID: 23110097-003BDUP	SampType: DUP	TestCode: Anions_DW(3 Units: mg/L				Prep Date:			RunNo: 173888		
Client ID: SRL-110123	Batch ID: R173888	TestNo: E300.0				Analysis Date: 11/2/2023			SeqNo: 4696608		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.100		0	0			0	0	30	m
Chloride	46.4	1.00		0	0			46.31	0.268	30	
Fluoride	0.307	0.100		0	0			0.3234	5.07	30	
Nitrate-N	0.0937	0.0230		0	0			0.09390	0.213	30	
Nitrite-N	ND	0.0330		0	0			0	0	30	
Orthophosphate-P	ND	0.160		0	0			0	0	30	
Sulfate	40.3	1.00		0	0			40.20	0.330	30	

Sample ID: 23110097-003BMS	SampType: MS	TestCode: Anions_DW(3 Units: mg/L				Prep Date:			RunNo: 173888		
Client ID: SRL-110123	Batch ID: R173888	TestNo: E300.0				Analysis Date: 11/2/2023			SeqNo: 4696610		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	19.0	0.100	20.00	0	94.9	80	120				
Chloride	69.4	1.00	20.00	46.31	116	80	120				E
Fluoride	19.7	0.100	20.00	0.3234	96.8	80	120				
Nitrate-N	4.50	0.0230	4.600	0.09390	95.7	80	120				
Nitrite-N	6.32	0.0330	6.600	0	95.8	80	120				
Orthophosphate-P	6.21	0.160	6.400	0.1386	94.9	80	120				
Sulfate	63.4	1.00	20.00	40.20	116	80	120				E

Qualifiers: B Analyte detected in the associated Method Blank
J Analyte detected below quantitation limits
ND Not Detected
PL Permit Limit

E Value above quantitation range
M Manual Integration used to determine area response
OG1
R RPD outside accepted recovery limits

H Holding times for preparation or analy
MC Value is below Minimum Compound
P Second column confirmation exceeds
RL Reporting Detection Limit

Revision v1

These commonly used Qualifiers and Acronyms may or may not be present in this report.

Qualifiers

U	The compound was analyzed for but was not detected above the MDL.
J	The reported value is greater than the Method Detection Limit but less than the Reporting Limit.
H	The hold time for sample preparation and/or analysis was exceeded. Not Clean Water Act compliant.
D	The result is reported from a dilution.
E	The result exceeded the linear range of the calibration or is estimated due to interference.
MC	The result is below the Minimum Compound Limit.
*	The result exceeds the Regulatory Limit or Maximum Contamination Limit.
m	Manual integration was used to determine the area response.
d	Manual integration in which peak was deleted
N	The result is presumptive based on a Mass Spectral library search assuming a 1:1 response.
P	The second column confirmation exceeded 25% difference.
C	The result has been confirmed by GC/MS.
X	The result was not confirmed when GC/MS Analysis was performed.
B	The analyte was detected in the Method Blank at a concentration greater than the RL.
MB+	The analyte was detected in the Method Blank at a concentration greater than the MDL.
G	The ICB or CCB contained reportable amounts of analyte.
QC-/+	The CCV recovery failed low (-) or high (+).
R/QDR	The RPD was outside of accepted recovery limits.
QL-/+	The LCS or LCSD recovery failed low (-) or high (+).
QLR	The LCS/LCSD RPD was outside of accepted recovery limits.
QM-/+	The MS or MSD recovery failed low (-) or high (+).
QMR	The MS/MSD RPD was outside of accepted recovery limits.
QV-/+	The ICV recovery failed low (-) or high (+).
S	The spike result was outside of accepted recovery limits.
W	Samples were received outside temperature limits (0° – 6° C). Not Clean Water Act compliant.
Z	Deviation; A deviation from the method was performed; Please refer to the Case Narrative for additional information

Acronyms

ND	Not Detected	RL	Reporting Limit
QC	Quality Control	MDL	Method Detection Limit
MB	Method Blank	LOD	Level of Detection
LCS	Laboratory Control Sample	LOQ	Level of Quantitation
LCSD	Laboratory Control Sample Duplicate	PQL	Practical Quantitation Limit
QCS	Quality Control Sample	CRQL	Contract Required Quantitation Limit
DUP	Duplicate	PL	Permit Limit
MS	Matrix Spike	RegLvl	Regulatory Limit
MSD	Matrix Spike Duplicate	MCL	Maximum Contamination Limit
RPD	Relative Percent Different	MinCL	Minimum Compound Limit
ICV	Initial Calibration Verification	RA	Reanalysis
ICB	Initial Calibration Blank	RE	Reextraction
CCV	Continuing Calibration Verification	TIC	Tentatively Identified Compound
CCB	Continuing Calibration Blank	RT	Retention Time
RLC	Reporting Limit Check	CF	Calibration Factor

This list of Qualifiers and Acronyms reflects the most commonly utilized Qualifiers and Acronyms for reporting. Please refer to the Analytical Notes in the Case Narrative for any Qualifiers or Acronyms that do not appear in this list or for additional information regarding the use of these Qualifiers on reported data.



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DATES REPORT

WO#: 23110097
09-Nov-23

Client: WSP Global Inc
Project: City of Piqua (Revised)

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Leachate Date	Prep Date	Analysis Date
23110097-001A	RDP-110123	11/1/2023 8:45:00 AM	Drinking Water	Calculated Analytes		11/2/2023 4:40:00 PM	11/3/2023 10:44:00 AM
				Metals (200.7)		11/2/2023 4:40:00 PM	11/6/2023 8:48:00 AM
				Metals (200.7)		11/2/2023 4:40:00 PM	11/5/2023 9:14:00 AM
				Metals (200.7)		11/2/2023 4:40:00 PM	11/3/2023 10:44:00 AM
				Metals (200.8)		11/2/2023 7:45:00 AM	11/3/2023 11:18:43 AM
				Metals (200.8)		11/2/2023 7:45:00 AM	11/6/2023 6:42:46 AM
				Metals (200.8)		11/2/2023 7:45:00 AM	11/6/2023 7:15:09 AM
23110097-001B				Anions Analysis by IC (EPA 300.0)			11/2/2023 10:47:00 AM
				Anions Analysis by IC (EPA 300.0)			11/2/2023 1:25:00 PM
23110097-002A	WTP-110123	11/1/2023 9:07:00 AM		Calculated Analytes		11/2/2023 4:40:00 PM	11/3/2023 10:47:00 AM
				Metals (200.7)		11/2/2023 4:40:00 PM	11/3/2023 10:47:00 AM
				Metals (200.7)		11/2/2023 4:40:00 PM	11/6/2023 8:52:00 AM
				Metals (200.7)		11/2/2023 4:40:00 PM	11/5/2023 9:18:00 AM
				Metals (200.8)		11/2/2023 7:45:00 AM	11/3/2023 11:34:11 AM
23110097-002B				Anions Analysis by IC (EPA 300.0)			11/2/2023 11:13:00 AM
				Anions Analysis by IC (EPA 300.0)			11/2/2023 1:52:00 PM
23110097-003A	SRL-110123	11/1/2023 8:38:00 AM	Non-Potable Water	Calculated Analytes		11/2/2023 4:40:00 PM	11/3/2023 10:50:00 AM
				Metals (200.7)		11/2/2023 4:40:00 PM	11/5/2023 9:22:00 AM
				Metals (200.7)		11/2/2023 4:40:00 PM	11/3/2023 10:50:00 AM
				Metals (200.7)		11/2/2023 4:40:00 PM	11/6/2023 8:55:00 AM
				Metals (200.8)		11/3/2023 7:45:00 AM	11/3/2023 12:56:38 PM
23110097-003B				Anions Analysis by IC (EPA 300.0)			11/2/2023 11:39:00 AM
23110097-004A	GMR-110123	11/1/2023 8:55:00 AM		Calculated Analytes		11/2/2023 4:40:00 PM	11/3/2023 10:54:00 AM

Revision v1



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DATES REPORT

WO#: 23110097
09-Nov-23

Client: WSP Global Inc
Project: City of Piqua (Revised)

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Leachate Date	Prep Date	Analysis Date
23110097-004A	GMR-110123	11/1/2023 8:55:00 AM	Non-Potable Water	Metals (200.7)		11/2/2023 4:40:00 PM	11/5/2023 9:26:00 AM
				Metals (200.7)		11/2/2023 4:40:00 PM	11/6/2023 9:49:00 AM
				Metals (200.7)		11/2/2023 4:40:00 PM	11/3/2023 10:54:00 AM
				Metals (200.8)		11/3/2023 7:45:00 AM	11/3/2023 1:27:30 PM
23110097-004B				Anions Analysis by IC (EPA 300.0)			11/2/2023 12:06:00 PM
				Anions Analysis by IC (EPA 300.0)			11/2/2023 2:18:00 PM
23110097-005A	GMRU-110123	11/1/2023 9:25:00 AM		Calculated Analytes		11/2/2023 4:40:00 PM	11/3/2023 10:57:00 AM
				Metals (200.7)		11/2/2023 4:40:00 PM	11/5/2023 9:30:00 AM
				Metals (200.7)		11/2/2023 4:40:00 PM	11/3/2023 10:57:00 AM
				Metals (200.7)		11/2/2023 4:40:00 PM	11/6/2023 9:52:00 AM
				Metals (200.8)		11/3/2023 7:45:00 AM	11/3/2023 1:37:50 PM
23110097-005B				Anions Analysis by IC (EPA 300.0)			11/2/2023 12:32:00 PM
				Anions Analysis by IC (EPA 300.0)			11/2/2023 2:44:00 PM
23110097-006A	QPH-110123	11/1/2023 9:38:00 AM		Calculated Analytes		11/2/2023 4:40:00 PM	11/3/2023 11:01:00 AM
				Metals (200.7)		11/2/2023 4:40:00 PM	11/5/2023 9:34:00 AM
				Metals (200.7)		11/2/2023 4:40:00 PM	11/3/2023 11:01:00 AM
				Metals (200.7)		11/2/2023 4:40:00 PM	11/6/2023 9:55:00 AM
				Metals (200.8)		11/3/2023 7:45:00 AM	11/3/2023 1:42:59 PM
23110097-006B				Anions Analysis by IC (EPA 300.0)			11/2/2023 12:59:00 PM
23110097-007A	RDPF-110123	11/1/2023 8:14:00 AM	Wipe	Metals Analysis (6010)		11/2/2023 11:55:00 AM	11/3/2023 11:48:00 AM
23110097-008A	RDPS-110123	11/1/2023 8:19:00 AM		Metals Analysis (6010)		11/2/2023 11:55:00 AM	11/3/2023 11:52:00 AM
23110097-009A	RDPFB-110123	11/1/2023 8:23:00 AM		Metals Analysis (6010)		11/2/2023 11:55:00 AM	11/3/2023 11:55:00 AM

Revision v1



SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
3310 Wm Street
Cuyahoga Falls, Ohio 44223
800-278-0140

Analysis Request / Chain of Custody

Refer to Terms and Conditions at www.settek.com

Client Name WSP		Project Identification City of Piqua		Project Street Address		City		State		Zip	
Client Street Address 521 Byers Rd, Suite 204		City Miamisburg, Ohio		State		Zip		Report To Russell Dornbusch		Quote Number	
Client Phone 937-859-3600		City Miamisburg, Ohio		State		Zip		Report To Russell Dornbusch		Facility ID	
Contact Person Russell Dornbusch		City Miamisburg, Ohio		State		Zip		Report To Russell Dornbusch		Facility ID	
Client Email Address russell.dornbusch@wsp.com		City Miamisburg, Ohio		State		Zip		Report To Russell Dornbusch		Facility ID	
Sampled By (Print Name and Provide Signature) <i>R. Dornbusch</i>		City Miamisburg, Ohio		State		Zip		Report To Russell Dornbusch		Facility ID	
Print: <i>R. Dornbusch</i>		City Miamisburg, Ohio		State		Zip		Report To Russell Dornbusch		Facility ID	
Sign: <i>R. Dornbusch</i>		City Miamisburg, Ohio		State		Zip		Report To Russell Dornbusch		Facility ID	
For PWS only, results to be reported to state by lab? If yes, lab fee may apply: <input type="checkbox"/> Y <input type="checkbox"/> N		City Miamisburg, Ohio		State		Zip		Report To Russell Dornbusch		Facility ID	

#	Sample Point ID	Sample Identification	Date Collected	Time Collected	Grab Sample	Composite Sample	Matrix: S = Solid, SL = Sludge, L = Liquid, O = Oil, A = Air, NPW = Non-Potable Water, DW = Drinking Water	Preservation: 1) HNO ₃ ; 2) H ₂ SO ₄ ; 3) HCl; 4) Zinc Acetate; 5) NaOH; 6) EPA; 7) none; 8) other (specify in comments)	Number of Containers per Sample	Metals (EPA 200.7/200.8) see blow	Phosphate (calculation)	Metals (200.7) see list below	For DW Only: Special Compliance or Routine (S/R)
		RDP - 110123	11/01/23	0845	✓		DW	1,7	2	✓	✓		
		WTP - 110123	11/01/23	0907	✓		DW	1,7	2	✓	✓		
		SRL - 110123	11/01/23	0838	✓		NPW	1,7	2	✓	✓		
		GMR - 110123	11/01/23	0855	✓		NPW	1,7	2	✓	✓		
		GMRU - 110123	11/01/23	0925	✓		NPW	1,7	2	✓	✓		
		QPH - 110123	11/01/23	0930	✓		NPW	1,7	2	✓	✓		
		RDPF - 110123	11/01/23	0814	✓		Wipe	7	1			✓	
		RDP5 - 110123	11/01/23	0819	✓		Wipe	7	1			✓	
		RDPFB - 110123	11/01/23	0823	✓		Wipe	7	1			✓	

Relinquished by:	Date	Time	Received by:	Date	Time	Notes / Comments:
<i>T. Dornbusch</i>	11/01/23	1:56	<i>T. Dornbusch</i>	11-01-23	11:55	Metals = Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mn, Mo, Ni, P, K, Se, Si, Ag, Na, Sr, Ti, Sn, Ti, V, Zn
Received at Summit by:	Date	Time	Carrier			
<i>T. Dornbusch</i>	11/11/23	10:15	<i>SBT</i>			

Sufficient volume provided to run QC?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Cooler?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
Received Temp.: 51 °C	Ice Present?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	MELTED

51.0 to 1.1

Sample Log-In Check List

Client Name: **WOO-OH-45342**

Work Order Number: **23110097**

RcptNo: **1**

Logged by: **Anthony W. Britton** **11/1/2023 4:15:00 PM**

Anthony Britton

Completed By: **Anthony W. Britton** **11/1/2023 7:01:56 PM**

Anthony Britton

Reviewed By: **Holly Florea** **11/2/2023 9:24:11 AM**

Holly Florea

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? Summit

Log In

3. Coolers are present? Yes ☒ No ☐ NA ☐
4. Shipping container/cooler in good condition? Yes ☒ No ☐
Custody seals intact on shipping container/cooler? Yes ☒ No ☐ Not Present ☐
No. Seal Date: Signed By:
5. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
6. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
7. Sample(s) in proper container(s)? Yes ☒ No ☐
8. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
9. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
10. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
11. Is the headspace in the VOA vials less than 1/4 inch or 6 mm? Yes ☐ No ☐ No VOA Vials ☒
12. Were any sample containers received broken? Yes ☐ No ☒
13. Does paperwork match bottle labels? Yes ☒ No ☐
(Note discrepancies on chain of custody)
14. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
15. Is it clear what analyses were requested? Yes ☒ No ☐
16. Were all holding times able to be met? Yes ☒ No ☐
(If no, notify customer for authorization.)

Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

18. Additional remarks:

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.1	Good	Yes			

APPENDIX

B


PHOTOGRAPH LOG

Appendix B - Photograph Log

Site Assessment Work Plan	9300 OH-66	Piqua, Ohio
Photograph No. 1	 A photograph showing the entrance to a test room. The entrance is a large, dark opening between two white, corrugated metal doors that are slightly ajar. The ground in front of the entrance is wet and reflective. A large, faint 'X' watermark is visible across the center of the image.	
Date: 10/20/2023		
Description:		
View of Test Room		
Orientation:		
Facing Northeast		


Photograph No. 2	 A photograph showing an outdoor area with a gravel pad. In the foreground, there is a large pile of grey gravel and a concrete slab. In the background, there is a small white building with a grey roof and a larger brick building. A black fence is visible in the immediate foreground. A large, faint 'X' watermark is visible across the center of the image.	
Date: 12/3/2023		
Description:		
Test Room and north edge of Test Pad (foreground)		
Orientation:		
Facing East		

Appendix B - Photograph Log

Site Assessment Work Plan		9300 OH-66	Piqua, Ohio
Photograph No. 3			
Date: 12/3/2023			
Description:			
View of Test Pad (foreground) with two basins. New fire training building (red) in center of photograph.			
Orientation:			
Facing East			

Photograph No. 4			
Date: 12/3/2023			
Description:			
Test pad and basin.			
Orientation:			
Facing West.			

Appendix B - Photograph Log

Site Assessment Work Plan	9300 OH-66	Piqua, Ohio
Photograph No. 5		
Date: 12/3/2023		
Description:		
Fenced gravel covered storage area and soil stockpile (foreground)		
Orientation:		
Facing East		

Photograph No. 6		
Date: 10/20/2023		
Description:		
Equipment in storage area prior to ESRG vacating site.		
Orientation:		
Facing North		

Appendix B - Photograph Log		
Site Assessment Work Plan	9300 OH-66	Piqua, Ohio
Photograph No. 7		
Date: 10/20/2023		
Description:		
Storage of wastewater totes pending pickup for off-site processing.		
Orientation:		
Facing East		